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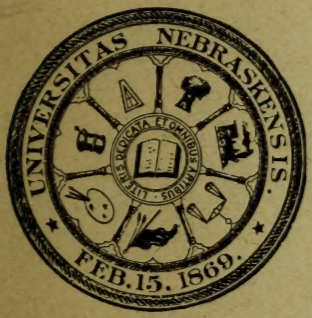


# THE UNIVERSITY OF NEBRASKA

## THE SCHOOLS OF AGRICULTURE, MECHANIC ARTS, DOMESTIC SCIENCE, FINE ARTS, AND MUSIC

## SPECIAL COLLEGIATE COURSES

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# CALENDAR

## 1900

September 18, T., to 21, F., Undergraduate examinations and registration
September 22, S., Annual opening address by the Chancellor
November 29, Th., to 30, F., Thanksgiving recess
December 11, T., Regular meeting of the Board of Regents
December 21, F., First day of Christmas holidays

## 1901

January 2, W., Last day of Christmas holidays
January 28, M, to February 1, F., Final examinations of first semester and examinations for entrance to the second semester
February 3, M., Second semester begins
February 15, W., Charter Day
Session of University Council
Regular meeting of Board of Regents
Fifth Midwinter Commencement
April 9, T., Regular meeting of Board of Regents
April 12, F., to 15, W., Easter recess
June 8, S., Final recommendation by Faculties for degrees

### COMMENCEMENT WEEK

June 9, Sun., 8 P. M., Baccalaureate sermon
June 10, M., Annual address before the College of Law

June 11, T., Class Day
4 P. M., Annual meeting of Board of Regents
8 P. M., Commencement concert
June 12, W., Alumni Day
10 A. M., to 2 P. M., Class reunions and dinners
2 P. M., Phi Beta Kappa oration and banquet
3 P. M., Annual business meetings of the alumni of the various colleges
4 P. M., Sixth annual report of the Chancellor before the alumni of the University
8 P. M., Annual Alumni address
June 13, Th., Twenty-ninth Annual Commencement
10 to 12 A. M., The Commencement procession, oration, and conferring of degrees
2 P. M., Luncheon and annual session of the University Council
8 P. M., Chancellor's reception

# THE SCHOOL OF AGRICULTURE

## THE FACULTY

CHARLES EDWIN BESSEY, LL. D., Acting Chancellor

ALBERT E. DAVISSON, A. B., Director
*HUDSON H. NICHOLSON, A. M., Professor of Chemistry
CHARLES E. BESSEY, LL. D., Professor of Botany
L. A. SHERMAN, Ph. D., Professor of English
DEWITT B. BRACE, Ph. D., Professor of Physics
ELLERY W. DAVIS, Ph. D., Professor of Mathematics
LAWRENCE BRUNER, B. Sc., Professor of Entomology
ALBERT T. PETERS, D. V. S., Investigator of Animal Diseases
O. V. P. STOUT, C. E., Professor of Agricultural Engineering
CHARLES R. RICHARDS, M. M. E., Professor of Practical Mechanics
T. LYTTLETON LYON, B. Sc. A., Professor of Agriculture
EDGAR A. BURNETT, B. Sc., Professor of Animal Husbandry
ROLLIN A. EMERSON, B. Sc., Assistant Professor of Horticulture
JULIA E. LOUGHRIDGE, A. B., Instructor in Mathematics
WILLIAM T. HORNE, B. Sc., Instructor in Botany
RACHEL CORR, B. Sc., Instructor in Chemistry and Physics

The School of Agriculture is a secondary technical school, offering instruction in subjects pertaining to farming. This instruction is almost identical with that given in the Winter Course in Agriculture, but in addition certain general educational studies of high school grade are pursued. The whole course is designed to train young men and women for greater usefulness on the farm.

*Absent on leave.

It also furnishes a preparation which will enable the student, at the completion of the course, to enter the Technical Agricultural Group in the University.

### REQUIREMENTS FOR ADMISSION

The school is open to young men and women of sixteen years of age, or over, who are not otherwise registered in the University, and who pass successfully an examination upon the following subjects: Arithmetic, Grammar, Geography, United States History, Physiology, Reading, Spelling, Writing. Examination upon these subjects will be of the same character as those ordinarily presented for entrance to the ninth grade of the public schools.

### THE SCHOOL CALENDAR

The school year is divided into a fall, winter, and spring term of fourteen, twelve, and ten weeks respectively. The School calendar otherwise is the same as that of the University. First term opens Tuesday, September 18, Second term Wednesday, January 2, Third term Saturday, March 23.

### COURSES OF STUDY

I.

| 1 | | 2 | | 3 | |
|---|---|---|---|---|---|
| Mathematics | 5 | Mathematics | 5 | Mathematics | 5 |
| English | 5 | English | 3 | English | 5 |
| Botany | 5 | *Soils | 3 | Botany | 5 |
| *Drawing | 1 | Dairying | 3 | *Drawing | 1 |
| *Shop Work | 2 | *Farm accounts | 2 | *Shop Work | 2 |
| | — | *Injurious insects, | 1 | | — |
| | 18 | *Plant pests | 1 | | 18 |
| | | | — | | |
| | | | 18 | | |

II.

| 1 | | 2 | | 3 | |
|---|---|---|---|---|---|
| Mathematics | 5 | Mathematics | 5 | Mathematics | 5 |
| English | 3 | English | 3 | English | 3 |
| Chemistry | 2 | Chemistry | 2 | Chemistry | 2 |
| Physics | 3 | *Horticulture | 3 | Physics | 3 |
| Entomology | 2 | *Stock-breeding | 2 | Entomology | 2 |
| *Drawing | 1 | *Stock-feeding | 3 | *Drawing | 1 |
| *Shop Work | 2 | | — | *Shop Work | 2 |
| | — | | 18 | | — |
| | 18 | | | | 18 |

III.

| 1 | | 2 | | 3 | |
|---|---|---|---|---|---|
| Mathematics | 5 | Mathematics | 5 | Surveying | 5 |
| Language (Lat. El.) | 5 | Language (Lat. El.) | 5 | Language (Lat. El.) | 5 |
| History | 5 | *Diseases of Animals | 3 | History | 5 |
| *Drawing | 1 | *Field crops | 3 | *Drawing | 1 |
| *Shop Work | 2 | *Agricultural Mechanics | 1 | *Shop Work | 2 |
| | — | *Agricultural Engineering | 1 | | — |
| | 18 | | — | | 18 |
| | | | 18 | | |

## SYNOPSIS OF COURSES

### The Soil

In this course the nature and condition of soils are studied particularly with regard to their relation to fertility and moisture. The effect of tillage upon the soil, and thus indirectly upon the plant, is explained, and likewise the effect of cultivation. The methods of soil treatment for the conservation of moisture are dwelt upon at length.

*Subjects marked with a star may be omitted by women and replaced by an equivalent amount of work in domestic science.

The object is to make the student understand the possibilities of the soil, and by means of such an understanding be led to practice an intelligent treatment, adapting himself to the conditions of drought or excessive moisture, as the case may be. A true appreciation of the value of the use of farm-yard manure, and its rational use, is also aimed at. Commercial fertilizers, such as have been shown by experiment to be profitably used in this state, are treated of. First year in Winter Course and in School. M., W., and F., at 10 o'clock.

### Field Crops.

The relation of plants to the air and soil is first studied. This includes the manner in which the plant obtains its food, the distribution of the food in the plant, the uses of the different parts of the plant, etc. The selection and testing of seed leading to the breeding of plants of superior excellence. Cereals, grasses, and forage crops are treated somewhat according to the following scheme: characteristics, varieties, vitality, climate, soil, manure, tillage, seeding, cultivation, harvesting, preservation, position in rotation, uses. Second year in Winter Course and in School. M., W., and F., at 11 o'clock.

### Dairy Husbandry

The principles of dairy operations. Practice and instruction in the handling and ripening of cream, and in churning, washing, salting, working, printing, coloring, judging, and packing of butter. Practice in the use of hand separators and in the deep setting of milk. Practice in the manipulation of the Babcock and other milk tests, in testing whole milk, skimmed milk, buttermilk, and cream. Instruction in the characteristics of the various breeds of dairy stock, with practice in judging by the score card; the breeding, rearing, feeding, and management of dairy cattle.

### Soil Laboratory

A study of the properties of soils by means of a series of tests in the laboratory. The following tests are made in different soils: volume weight of the soil, power of loose soils to

retain moisture, power of compact soils to retain moisture, the capillary power of soils, rate of percolation of water through soils, percolation of air through soils, effect of mulches on evaporation of water through soils, behavior of the soil towards gases, power of soils to fix fertilizing material, etc. One afternoon each week. Second year in Winter Course and third year in School.

### Farm Accounts

A system of bookkeeping which, while being simple, yet enables the farmer to tell just what his profit or loss may have been in any particular line of his business. Second year in Winter Course and in School, Thursday, 10 o'clock.

### Horticulture

A general survey of the principles and practices of Horticulture. Three lectures or recitations per week on site, soils, fertilizers, varieties and their improvement, propagation, arrangement of plants for convenience and for artistic effect, tillage, pruning, training, effect of windbreaks and forest planting, protection from frost and winterkilling, treatment of insect enemies and diseases, forcing, harvesting, storing, marketing, etc. Laboratory or field practice, one afternoon each week, in construction of hotbeds and cold frames, germination of seeds, seed testing, grafting, setting trees, pruning and training, preparation of fungicides and insecticides, etc.

A preliminary study of fruits, vegetables, shrubs, forest and ornamental trees. Three lectures per week on varieties adapted to Nebraska, special methods of culture, etc. Laboratory and field work in the collection, preparation, and study of specimens.

### Animal Husbandry

Course 1. School of Agriculture. First year.

Text book: Study of Breeds by Thos. Shaw.

Includes study of types of animals, their characteristics and their adaptability to Nebraska conditions. It will take up in

detail four leading beef breeds of cattle, studying history and characteristics. Also taking the leading breeds of sheep and swine. A course in judging farm animals will form a part of this course.

Course 2. School of Agriculture. Second Year.

Study of Principles of feeding. Text book: Feeds and Feeding by W. A. Henry.

Includes the nature of food, the manner in which it is digested and used by the body; the wastes of the body and the principles of nutrition, including a study of Balanced Rations, and of Feeding Experiments with Cattle, Sheep, and Swine.

### English.

*a.* Reading from classic authors, mainly prose, three hours a week. Work is so arranged as to bring the pupil into contact with as much good literature as possible, to the end that he may become familiar with clear, strong English style.

*b.* English Composition, with the essentials of Grammar and Rhetoric, two hours a week. The purpose of this work is to give readiness and correctness in the use of the language. West's English Grammar for beginners is recommended as a text in Grammar, and what Rhetoric is given will not require a text.

### Agricultural Engineering and Hydraulics

Farm survey with chain. Drainage leveling. Topographical survey for irrigation or landscape gardening. Measurement and division of water. Application to crops. Minor irrigation structures.

### Agricultural Mechanics

Draft of vehicles and field implements in fields, on poor roads, on good roads. Wind wheel and pumps. Strength of timber, ventilation of buildings. Bearing power of soils as foundations. Elementary study of heat, as related to warming and ventilation, protection against freezing, economic generation and use.

### Botany.

The elementary study of the structure and physiology of plants, followed by a more careful study of selected types of plants. Especial emphasis will be laid upon the study of those plants which are of interest to us either because of their usefulness in everyday life, or on account of their harmfulness, as in the case of the parasitic and saprophytic fungi.

A commodious laboratory has been fitted up with tables, compound microscopes, glassware, and other apparatus and material for study, sufficient for the immediate uses of the students, while in emergencies additional apparatus and material from the large laboratories and collections of the Department of Botany in the University may be drawn upon.

### Plant Pests

A course of lectures and readings on the common weeds and other harmful plants which infest Nebraska farms and gardens, illustrated by specimens of the plants themselves and their seeds.

### Agricultural Zoology

Brief account of Anatomy of Animals. Development in the higher forms. Sterility, fertility, monsters, etc. Relations to breeding. Animals helpful to the farmer, excluding those called domestic animals. Habits, enemies, protection.

Injurious animals—Suppression, particularly parasites and epidemics. Prevention. Meat inspection. Raising pure meat.

All of the topics will be treated in a simple way without technical terms, etc., with the aim that the student may acquire a correct idea of the relation of the various animals to his success.

### Carpentry and Blacksmithing

The care and use of carpenters' tools and the methods of constructing various forms of joints, splices, dovetails, and panels.

### forge work

A short course of exercises showing the methods of drawing, upsetting, bending, welding, and tempering.

EXPENSES

Tuition is free. The matriculation fee is five dollars, payable to the Treasurer of the University at the beginning of the first year only. A deposit of four dollars is required at the beginning of each year to cover breakage, loss of tools, and waste of material. At the end of the year the balance of this deposit is returned to the student.

THE WINTER COURSE IN AGRICULTURE

The Winter Course in Agriculture will begin January 2, 1901, and continue for eleven weeks. The course is designed to meet the demand for simple and practical instruction in Agriculture. It will occupy but a short time, and that at a season of the year when farm work is least pressing. The course continues through two winters.

No examinations for entrance are required, but applicants will be expected to have a good knowledge of the primary English branches as taught in the district schools, and must be at least sixteen years of age.

In preparing the course of instruction the object has been to make it as practicable as possible, to give the student something that will be of value to him when he returns to the farm. The instruction is given by means of lectures and actual practice. The practice, however, as will be seen below, is not in the work of the farm with which every farmer is familiar, but in operations requiring skill and knowledge, and which are not ordinarily acquired on the farm.

COURSE OF STUDY

| FIRST YEAR | SECOND YEAR |
|---|---|
| The Soil. | Field Crops. |
| Dairying. | Soil Laboratory. |
| Horticulture. | Farm Accounts. |
| Stock-breeding. | Horticulture. |
| Diseases of Animals. | Stock-feeding. |
| Plant Pests. | Injurious Insects. |
| English. | Mathematics. |
| Carpentry or Blacksmithing. | Agricultural Engineering. |

The libraries, museums, and other accessories to the University will be available to the student in the Winter Course.

The Agricultural Students' Club meets weekly during the session of the Winter Course. The Club is organized for the discussion of subjects pertaining to Agriculture and personal culture.

# THE SCHOOL OF MECHANIC ARTS

## A TWO-YEARS COURSE IN THE ELEMENTS OF MECHANICAL CONSTRUCTION

### THE FACULTY

CHARLES EDWIN BESSEY, LL. D., Acting Chancellor

CHARLES RUSS RICHARDS, M. M. E., Director Professor of Mechanical Engineering and Practical Mechanics
DEWITT B. BRACE, Ph. D., Professor of Physics
MORGAN BROOKS, M. E., Professor of Electrical Engineering
ELLERY W. DAVIS, Ph. D., Professor of Mathematics
*HUDSON H. NICHOLSON, A. M., Professor of Chemistry
LUCIUS A. SHERMAN, Ph. D., Professor of English
GEORGE R. CHATBURN, A. M., Adjunct Professor in Mathematics
CHARLES E. CHOWINS, Instructor in Practical Mechanics
ROBERT MORITZ, Ph. M., Instructor in Mathematics
GEORGE H. MORSE, B. E. E., Instructor in Mechanical Drawing and Machine Design
ORVILLE PRICE, B. Sc., Instructor in Mechanical Drawing
WILLIAM W. VOTAW, Instructor in Practical Mechanics
E. C. FLETCHER, Student Assistant in Practical Mechanics
CLARENCE A. PEARSON, Student Assistant in Practical Mechanics

### GENERAL ANNOUNCEMENT

The School of Mechanic Arts was organized to give some of the fundamental principles of mechanical work to those young men who had neither the time,

*Absent on leave.

preparation, nor money to take up a regular course in engineering. It is not a trade school, since no specific trade is taught, but the elements of all of the more important trades are given, thus enabling the student to intelligently choose the work he finds most congenial.

### THE SCHOOL YEAR

The School year coincides with the University year, which embraces thirty-eight weeks, beginning September 18, 1900, and closing the first week in June, 1901. It is especially desirable that students report promptly at the beginning of the school year, as it will be found difficult to do the advanced work until the back work has been made up.

### REQUIREMENTS FOR ADMISSION

The school is open to young men of sixteen years of age, or over, who are not otherwise registered in the University, and who, in the opinion of those in charge of the school, have had the requisite training for properly carrying on the work. The applicant should understand arithmetic and elementary English grammar. Students who enter after the beginning of the semester will be required to take examinations, at the discretion of the heads of the departments in which work is taken. It is impossible for students to enter this school at the beginning of the second semester. While the school is not a preparatory school to the regular University course and considerable extra work is required to enter the regular University

courses after completing the work of this school, still this work will prove of great benefit to those who do take up the collegiate engineering courses.

Students entering the school are required to take the course as outlined in the following schedule. Under no circumstances will substitutions be permitted, except when the student can present credits for some of the required work in the school.

## THE COURSES OF INSTRUCTION

### FIRST YEAR

*First Semester*

Mathematics, A ..... 5 hours
English, A ..... 5 "
Lectures on Mechanical Practice (Mech. Eng., 19) ..... 2 "
Mechanical Drawing* (M. D., 9) ..... 2 "
Shop Work* (Mech. Eng., 1) ..... 3 "
*a.* Lectures
*b.* Bench Work in Wood
*c.* Wood Turning
*d.* Molding

*Second Semester*

Mathematics, B ..... 5 hours
English, B ..... 5 "
Lectures on Mechanical Practice (Mech. Eng., 14) ..... 2 "
Mechanical Drawing (M. D., 10) ..... 2 "
Shop Work* (Mech. Eng., 2) ..... 3 "
*a.* Pattern-making
*b.* Foundry Work

### SECOND YEAR

*First Semester*

Mathematics, C ..... 4 hours

*Three hours' work in the shops or drawing room count for one hour credit in the schedule.

Theme Writing (English, C) .....1 hour
Physics .....3 hours
Lectures on Mechanical Practice (Mech. Eng., 21) .....2 "
Lectures on Steam Machinery (Mech. Eng., 23) .....2 "
Mechanical Drawing (Mech. Dr., 11) .....2 "
Shop Work* (Mech. Eng., 2) .....2 "
*a.* Forging in Iron and Steel
*b.* Filing, Chipping, and Scraping

*Second Semester*

Mathematics, D .....5 hours
Theme Writing (English, D) .....1 hour
Physics .....3 hours
Lectures on Electrical Machinery (Elec. Eng., 12) .....2 "
Machine Design (Mech. Dr., 12) .....2 "
Shop Work .....5 "
*a.* Filing and Fitting
*b.* Machine Work in Metals

## DESCRIPTION OF COURSES OF INSTRUCTION

### MATHEMATICS

The course includes a brief review of arithmetic; tables as labor savers; curve plotting by tables; exponential and logarithmic tables, and the slide rule; computation by logarithms; mensuration, with a sketch of its geometric foundation; use of formulae in computation; graphical methods in computation; trigonometric functions and their use; equations of the first, second, and third degree; geometric meanings and graphic solutions; solution by tables; differentiation and integration, with their geometric and mechanical significance; use of tables of integrals, geometric integration, mechanical integrators.

### ENGLISH

For the mechanic English has a practical value since it will enable him to occupy positions for which, without such ability, he would be unfit. The purpose of the instruction in English, as in other subjects taught in the School, is to give the student the greatest amount of practical training.

PHYSICS

The laws of motion, of heat, of electricity, and of light have a very direct bearing upon mechanical design and construction. A knowledge of the various physical phenomena is of the greatest value to the mechanic, being of direct assistance in the solution of many of the practical problems that will be presented to him.

CHEMISTRY

If the student expects to engage in some particular line of mechanical work, where a knowledge of chemistry will be useful, he may substitute chemistry for physics in the second year of the course. This substitution will be allowed only when sufficient reasons for such a change are presented. In general, the course in physics will be the most valuable to students in the school.

MECHANICAL PRACTICE

During the first year and a half of the course, two lectures a week are given on Mechanical Practice. They run parallel with the work in the shop, and are intended in part to give a better knowledge of the work done therein, and at the same time to discuss those things which the intelligent mechanic must know, but which do not necessarily form a part of his practical shop work. These lectures include a discussion of the standards of length; the form and action of carpenters' and turners' tools; the physical properties of timber; simple framed structures, floors, roofs, etc.; plans, specifications, and estimates; the metallurgy of iron and steel; the forms and construction of patterns and core-boxes; molding and foundry practice; wood-working machinery; forging tools and machinery; files; machine work in metals; and general metal-working machinery.

STEAM AND ELECTRICAL MACHINERY

A number of the more important engineering problems of peculiar interest to the mechanic, who may be called upon to build, repair, or run engines, dynamos, boilers, or other apparatus for the generation or transmission of power, will be discussed in the lectures on steam and electrical machinery,

including the elementary theory of the steam engine, forms of engines, valve mechanism, indicator practice and engine economy; forms of boilers, boiler settings, care and management of boilers; fuels; accessory steam machinery; the gas engine; elementary theory of the dynamo; electric lighting; electric railways; electrical distribution and wiring; water power; power transmission by gears, belts, ropes, electricity, etc.

### MECHANICAL DRAWING

Six hours each week throughout the course are devoted to mechanical drawings, and the student is then not only rendered capable of interpreting drawings, but he will have acquired the skill and ability to make them himself. The instruction includes the care and use of the drawing instruments, drawing from copy, machine sketching, detail drawing, tracing and blue printing, line shading, tinting, drawing from dictation, gears, parts of machines, etc.

### SHOP WORK

The instruction in shop work is given by a systematic course of exercises, showing the use of the different tools and the methods of mechanical construction. After the completion of any given set of exercises, the principles there learned will be applied in the construction of some complete piece of work. Since the work is solely for construction, and there is as little repetition as possible, rapidity of execution is not expected or desired. The principles of tool use and mechanical construction are taught, but great dexterity and rapidity of execution, which result from long practice, can only be obtained by outside work. The work done is as follows:

Bench Work in Wood.—Nine hours' work each week for one-half of the first semester of the first year.

Wood Turning.—Nine hours' work each week for one-half of the first semester of the first year.

Pattern-making.—Nine hours each week during the second semester of the first year.

Foundry Work.—Taken in connection with the course in pattern-making.

Forging in Iron and Steel.—A systematic course of exercises

in drawing, up-setting, bending, welding, and tempering. Applications of the above in the construction of more elaborate finished pieces of work. Nine hours each week during the first semester of the second year.

Filing, Chipping, and Scraping.—Three hours each week during the whole of the second year.

Machine Work in Metals.—Fifteen hours each week during the second semester of the second year.

OTHER PRACTICAL INSTRUCTION

During the second year of the course, each student will be given practice in the care and management of the power boilers, the steam engines, and the various dynamo-electric machines, together with indicator practice, valve setting, and engine and boiler tests.

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FACILITIES FOR INSTRUCTION

The Wood Shop, Forge Shop, Foundry, and Machine Shops are all fully equipped with the necessary tools, machinery, and furniture for the most thorough instruction.

The Forge Shop is equipped with twenty-four stationary forges with a like number of anvils and sets of small tools. The smoke is removed and the blast supplied to the forges by a seventy-inch, double ended fan. This shop also contains a hand forge; a tempering furnace; a hand punch and shear; and benches with blacksmiths' vises.

The Engineering Laboratories contain a number of steam engines, boilers, dynamos, motors, etc., together with various instruments for testing the same.

The Drawing-room is a large, well-lighted room, located in the fourth story of Mechanic Arts Hall.

It contains fifty-four drawing tables, and a large number of drawing boards. All paper and drafting instruments are supplied by the student.

TECHNICAL LIBRARY.—There are on file in the department libraries a number of the leading engineering journals, together with a number of reference books, bound volumes of engineering papers, and proceedings of engineering societies. The student will also have free access to all the books and papers in the University library.

## THE SCHOOL OF DOMESTIC SCIENCE

A TWO-YEARS COURSE

### THE FACULTY

CHARLES EDWIN BESSEY, LL. D., Acting Chancellor

ROSA BOUTON, A. M., Director
ANNETTE PHILBRICK, B. Sc., Instructor in Domestic Science
ROSA BOUTON, A. M., Adjunct Professor of Chemistry
DEWITT B. BRACE, Ph. D., Professor of Physics
AUGUST RIMBACH, Ph. D., Instructor in Botany
LAWRENCE BRUNER, A. M., Professor of Entomology
R. E. MORITZ, A. M., Instructor in Mathematics
ALBERT E. DAVISSON, A. B., Instructor in English
WILLIAM D. HASTINGS, Ph. D., Professor of Physical Training
ANNE L. BARR, A. M., Instructor in Physical Training
SARA S. HAYDEN, Instructor in Drawing

The School of Domestic Science is designed primarily for young women who can not take a four-years college course, but who desire to secure for themselves practical educational training which shall render them useful and efficient members of society and enable them to perform skilfully and intelligently those duties in the home which sooner or later come to almost every woman.

The school is in no sense simply a cooking school. The work is not merely mechanical, but educational in the truest sense of the word. The student will be

trained to think as well as to do, and will come to realize the fact that the changes which take place in the cookery of food materials are as truly dependent upon scientific principles as are the changes ordinarily studied in scientific laboratories.

The school year coincides with the University year, which embraces thirty-eight weeks, beginning September 18 and closing in June. Students should report promptly at the beginning of the school year.

## REQUIREMENTS FOR ADMISSION

The school is open to young women of sixteen years of age, or over, who, in the opinion of those in charge of the school, have had the requisite training for properly carrying on the work. The applicant should understand arithmetic and elementary English grammar.

## THE COURSES OF INSTRUCTION IN SCHOOL OF DOMESTIC SCIENCE

### FIRST YEAR

*First Semester*

| | |
|---|---|
| Domestic Science (Cookery) | 3 hours |
| Household Economics (Lecture Course) | 2 " |
| Chemistry | 2 " |
| Hygiene | 2 " |
| Drawing | 2 " |
| English | 5 " |
| | 16 hours |

*Second Semester*

| | |
|---|---|
| Domestic Science (Cookery) | 3 hours |
| Household Economics (Lecture Course) | 2 " |
| Chemistry | 2 " |
| Botany | 2 " |
| Drawing | 2 " |
| English | 5 " |
| | 16 hours |

SECOND YEAR

*First Semester*

| | |
|---|---|
| Domestic Science (Cookery, etc.) | 3 hours |
| Chemistry of Food and Cleaning agents | 2 " |
| Physical training | 1 hour |
| Entomology | 2 hours |
| Physics | 3 " |
| Mathematics | 5 " |
| | 16 hours |

*Second Semester*

| | |
|---|---|
| Domestic Science (Cookery, etc.) | 3 hours |
| Chemistry of Food and Cleaning agents | 2 " |
| Physical training | 1 hour |
| Bacteriology | 2 hours |
| Physics | 3 " |
| Mathematics | 5 " |
| | 16 hours |

## DESCRIPTION OF COURSES OF INSTRUCTION

### DOMESTIC SCIENCE

The aim is to develop character in the kitchen as well as in the laboratory. Special attention is directed to the fundamental principles of cookery and their application in the preparation of individual dishes. Practical work is done in cooking in a kitchen laboratory. Special attention is given to the most

economical methods of cooking, as well as to those methods which shall render food most nutritious, palatable, and attractive.

CHEMISTRY

During the first year the commonly occurring elements and their compounds are studied. The first semester of the second year is devoted to a study of the chemistry of foods and their cookery; methods of detecting adulterations, etc. The second semester, the study of the chemistry of cleaning is taken up, together with home sanitation, which includes plumbing, ventilation, disinfection, etc. Lectures, recitations, and laboratory practice during entire course.

PHYSICS

During the second year, three hours each week, including recitations and lectures with demonstrations, will be devoted to a course in general elementary physics.

BIOLOGY

A knowledge of plant and animal life in many of its lower forms is indispensable to her who would intelligently prepare and preserve food. Two hours of botany will be given the second semester of the first year. During the second year instruction will be given in entomology two hours the first semester, and in bacteriology two hours the second semester.

MATHEMATICS

The course includes a brief review of arithmetic, tables as labor savers; curve plotting by tables; logarithmic tables, and the slide rule; computation by logarithms; mensuration, with a sketch of its geometric foundation; use of formulae in computation; graphical methods in computation.

ENGLISH

During the first year the instruction will include reading from classic authors, mainly prose, three hours each week, and English composition with the essentials of grammar and rhetoric, two hours each week. The second year, one theme each week.

FREE-HAND DRAWING

This course includes free-hand drawing same work in painting and wood-carving.

Lectures will be given on the harmony of color and how to use one's means, be they large or small, to the best advantage in making home beautiful.

PHYSICAL TRAINING AND HYGIENE

Every woman should have a knowledge of the wonderful mechanism of the human body and know how to take proper care of it. She needs also definite, systematic physical training. These needs are supplied by the Physical Training Department of the University. The members of the School of Domestic Science are given work in the regular classes in Hygiene and Physical Training in the University.

# THE SCHOOL OF FINE ARTS

## THE FACULTY

CHARLES EDWIN BESSEY, LL. D., Acting Chancellor

SARA S. HAYDEN, Director
HENRIETTA M. BROCK, Instructor

The University School of Fine Arts occupies rooms on the second floor of the Library Building. Besides the class rooms, which are well lighted, attractive, and completely equipped with easels, frames, and casts, there is a fire-proof gallery 60x70 feet, where art exhibitions and receptions are held. The annual winter exhibition of paintings by leading American and foreign artists and other minor exhibitions find an excellent setting in this beautiful room. It is lighted by large skylights during the day and by two hundred electric lights in the evening.

The school offers courses in drawing, painting, sculpture, and wood-carving. The School of Drawing and Painting is divided into four classes or sections, through each of which the student must pass in succession.

I. ELEMENTARY

Drawing from geometrical solids, still-life, and antique fragments, in outline, and light and shade.

II. INTERMEDIATE

Same, more advanced. Pen and ink. Perspective.

III. ANTIQUE

Heads and figures from cast. Still life in colors.

IV. LIFE

Costume; life class. Work in wood-carving and china-painting can be carried at any time during the course.

Promotion from class to class is made through examinations held the first of every month. At these examinations each student is expected to hand in examples of the month's work for inspection. At each of these examinations the inspection committee will select the best of the work to be hung upon the wall. From these will be selected the work for the final examination.

A course of lectures on art topics will be given during the winter.

A sketch class which is free to students of the department is held one evening of each week. A fee of $3.00 per semester is charged to outside members.

TUITION FEES

One lesson per week .....$10 per semester
Two lessons per week .....$18 per semester
Three lessons per week, with use of studio daily .....$25 per semester
Special terms for china painting.

### CHINA PAINTING

Instruction will be given in figure painting on porcelain. Flower painting from nature.

Enamels, conventional and all branches in decorative work.

An evening class will be conducted each week. This will be a class in design and preparatory work.

The class in painting will meet on the afternoons of Tuesday, Thursday, and Friday from 1:30 to 4:30.

#### TUITION FEES

| | |
|---|---|
| One lesson per week | $12 per semester |
| Two lessons per week | $23 per semester |
| Three lessons per week | $33 per semester |

Special arrangements made with persons desiring to take less than a semester's instruction.

## THE AFFILIATED SCHOOL OF MUSIC

### THE FACULTY

CHARLES EDWIN BESSEY, LL. D., Acting Chancellor

WILLARD KIMBALL, Oberlin; Leipzig; private pupil of Dr. Oscar Paul
*Director; Harmony, Pipe-Organ*

HENRY PURMORT EAMES, private pupil Madam Schumann and James Kwast
*Pianoforte*

JOHN RANDOLPH, Cincinnati College of Music; New England Conservatory of Music
*Voice, General Theory*

AUGUST HAGENOW, Leipzig Conservatory of Music
*Violin, Instructor University Orchestra*

MRS. WILL OWEN JONES, New England Conservatory of Music
*Pianoforte*

MRS. MARIE SOELKE POWERS
*Pianoforte*

MRS. CARRIE B. RAYMOND
*Sight Reading*

WINIFRED HEARN
*Instructor in Voice*

EUGENIA GETNER
*Instructor in Voice*

EARLE WEHN
*Cornet, Leader University Cadet Band*

FLORENCE WORLEY
*Voice*

LILLIAN EICHE
*Violoncello*

GRACE REYNOLDS
*Assistant Instructor in Voice*
JOHN S. WOODS
*Mandolin, Guitar, Banjo*
EDWARD L. MOUCK
*Practical Pianoforte Tuning*
MARTHA HASSE
*Pianoforte*
MARY KETTERING
*Practice Clavier*
CLARA DIMMICK
*Assistant Instructor in Pianoforte*
ROSE CLARK
*Assistant Instructor in Harmony*
MAE BILTGEN
*Secretary*

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Affiliated with the University is the School of Music, offering courses that are intended to give those who complete them the highest degree of proficiency. While it is impossible to specify the exact course for each individual, the following may be taken as fairly typical. The work indicated, or its equivalent, must be carried by all candidates for graduation.

Students may take any one or more of the courses outlined, either in classes or privately. But the candidate for graduation must pursue three courses, viz., the complete course in the science of music (including sight-singing, harmony, counterpoint, orchestration, history and theory of music); in instrumental music, either pianoforte, pipe-organ, violin, or voice; and one elective course.

This requirement is made in order to secure to one who seeks a diploma from the University such mastery of the principles and practice of musical art as will enable the graduate to secure and maintain an honored position in the best academies and colleges; to guard against a narrow and one-sided view of the subject, and to develop a broad and generous musicianship which does not over-estimate the value of virtuosity alone.

COURSES TO GRADUATION

I. Theory of Music: Text-book and lectures, twice each week for one year.

II. Sight-singing: Work in elementary University chorus, once each week for one year.

III. Elementary harmony: Notation, terminology, formation of chords, modulation; text-book, lectures, composition, and practice, twice each week for one year. This course must be preceded by Course II.

IV. Advanced harmony: Suspension, harmonizing melodies, with *canti firmi* in the different voices, enharmonics, figuration, four-to-eight-part writing, study of form, counterpoint, twice each week for one year.

V. Piano, Pipe-Organ, Violin, or Voice: Twice each week throughout the course.

PIANOFORTE

The course includes the systematic study of technical exercises for the development of the muscles of the hand and arm, the complete control of which is absolutely essential to a skilful interpretation of any composition of merit. In this work the Virgil Practice Clavier will be used for many who contemplate

a thorough course and who need the strengthening of the muscles of hand and arm. For others the preliminary work on the Clavier may not be necessary.

Throughout the course, etudes of various degrees of difficulty and adapted to the individual needs of the student will be given in connection with studies and exercises designed to bring about a close relationship between the physical and intellectual faculties. The works of the classic and romantic composers, both ancient and modern, will be studied according to the taste, inclination, and physical powers of the student. More advanced and graduate students will have the opportunity of playing with instructors in duos, trios, and quartettes.

All students are required to sustain satisfactory examinations before passing to the next higher grade.

This prescribed course requires about five years of the regular student of average ability, presuming practically no knowledge of the instrument when entering the School of Music, and also presuming some natural talent and considerable maturity of character and self-discipline.

Students not candidates for graduation may have the usual conservatory privileges of electing work freely, according to ability and preparation.

### VOICE DEVELOPMENT

The production of a pure, resonant, and musical tone is only the result of patient and intelligent study; and the natural and easy control of the singing voice

is obtained only by the correct use of the breath and the vocal organs. The study of neither the so-called Italian or German methods can produce the desired results, unaided by the careful and discriminating judgment of an instructor of wide experience, and one who has sufficient knowledge of physical conditions as to understand the proper relation and use of all the muscles involved (the diaphragm, the pectorals, costal, intercostal, and dorsal), and who knows how to *focus* and *place* the voice without contracting the throat or other muscles. Satisfactory results can only be secured by great skill on the part of the instructor and wise discrimination on the part of the student. Solfeggi and other vocal exercises from eminent voice-builders will be employed, together with English, German, French, and Italian songs and ballads, leading up to the oratorio and the opera. Pupils thus become practical singers, and this acquaintance with the best vocal works prepares them for the oratorio and the operatic stage. This course requires three years.

### VIOLIN, VIOLA, VIOLONCELLO

The courses offered for the viola and 'cello are as comprehensive and thorough as those of other departments.

The course for the viola requires only about two terms, the pursuance of which will greatly increase the usefulness of the violinist.

The violoncello and double bass may be studied in

courses corresponding to the general plan of other stringed instruments.

There will be an ensemble class in this department with weekly rehearsals, and those who are sufficiently advanced will be admitted to the University orchestra —a training field invaluable to the student for sight reading and in developing a musical taste.

### THE ORGAN

This department is under the personal supervision of the director.

Students can not profitably take up the study of this instrument until they have acquired a good technique in the study of the pianoforte.

The course includes Rinck's School, Buck's phrasing studies, pedal studies by Volckmar, lessons in interlude playing, modulation and registration, sonatas of Merkel and Mendelssohn, and the best compositions of French, German, and English writers.

A two-manual pedal organ is at the service of students. It is sufficiently large to display the principles of organ playing, and arrangements for the use of larger organs may be made.

The magnificent organ which was on exhibition at the Trans-Mississippi Exposition, and which was manufactured by the M. P. Moeller Organ Company, of Hagerstown, Md., has been presented to the University by the generosity of its alumni, and is now temporarily located in Grant Memorial Hall.

This organ is a thoroughly modern instrument,

having three manuals, forty-five stops, radiating pedals, pneumatic action, and composition pedals.

### WIND INSTRUMENTS

Competent instructors are provided for those desiring to study the clarinet, flute, cornet, and band instruments. These may be taken as electives by those pursuing the regular course.

Guitar, mandolin, and banjo are taught by special instructors.

### PIANO TUNING

The course covers one year and will include a regular course of sight reading (vocal), setting temperament, and other principles and practice of tuning, four terms of harmony and history, construction of the different methods of stringing and mechanism, reed organ tuning, voicing, and regulating.

Students can not be admitted to this course for less than one year, and no student will be admitted who can not readily distinguish different degrees of pitch.

### LECTURES

Among the free advantages is a course of lectures upon musical topics by instructors of the School of Music and the University. Attendance upon this course will be required from all regular students.

### CONCERTS

During the school year a number of concerts will be given, viz.: The Choral series: University chorus

and soloists in oratorio; Artists' series: Performers from abroad and the faculty; Chamber-music series: String trios, quartettes, and quintettes; semi-public soirees by instructors and pupils; weekly recitals by pupils for the acquirement of self-possession.

### UNIVERSITY WORK

For students in regular University courses the studies of piano, voice culture, violin, or organ, together with the science of music, are made elective.

Students of the School may be matriculated as students of the University, without examination, upon the payment of the usual matriculation fee of five dollars. This will entitle them to free instruction in all University courses which they are prepared to enter, and will give them all library, laboratory, and gymnasium privileges of University students. This is one of the most striking features of the School. It thus combines with music training, sound general education to the student, at very slight additional expense.

### POST GRADUATE WORK

Courses have been planned for those who have completed the regular work and who desire to still further pursue certain branches. These will be conducted by the heads of departments in a two-years course.

### ADVANTAGES

Other advantages in connection with University privileges are: Sight-reading, chorus classes; lectures on history and other topics relating to music;

orchestral practice; ensemble classes, prima vista reading piano classes. These, taken in connection with gymnasium, art privileges, use of libraries and reading room, are invaluable advantages which can only be fully appreciated by those who have been obliged to pay extra for them in other schools.

### FEES

Tuition varies with the instructors. A complete schedule of fees will be sent on application.

# THE SPECIAL COLLEGIATE COURSES

## THE TEACHERS' COURSE

### REQUIREMENTS FOR ADMISSION

This course may be elected by juniors and seniors pursuing regular courses in the College of Literature, Science, and the Arts and the Industrial College.

It is also open for all graduates of the advanced course of the State Normal School who have had at least one year's experience in teaching; to all graduates of the state high schools, accredited by the University, who have had at least two years' experience in teaching, and to others who can satisfy the heads of the departments concerned that they are sufficiently qualified to pursue the work with credit and with profit.

The aim of the course is to offer an opportunity to all those regular students who intend to enter the profession of teaching, and who wish, during their college course, by special and professional study, to prepare for positions of supervision and teaching in departments of higher education.

It also offers an opportunity to a large body of qualified teachers who wish to increase their efficiency by a more extended scholarship and a more thorough

study of educational problems in which they are particularly interested.

REQUIREMENTS FOR CERTIFICATE

The course covers two years' work, or a total of thirteen University courses, to be divided as follows:

*a.* Special Knowledge. The completion of work amounting normally to five University courses in a subject or group of closely allied subjects which the student expects to teach, the ultimate decision as to the group of subjects and the student's proficiency resting with the head of the department most directly concerned.

The above work will include some instruction by the department with reference to the teaching of these subjects in the secondary schools.

*b.* Professional Knowledge. The completion of work in pedagogy amounting to two and two-fifths courses, and of work in psychology amounting to one and one-fifth courses, the courses to be designated by the heads of the departments concerned.

*c.* General Knowledge. Additional work sufficient to represent four and two-fifths courses (exclusive of the work representing special or professional knowledge) to be elected by the student from the departments of the University, under the advice of the head of the department of pedagogy and the head of the department with whom the student is taking his special work.

The University Teachers' Certificate will be granted

to such graduates of the University as have satisfactorily completed all the requirements of the Teachers' Course as outlined above, and have shown such marked proficiency in the special and professional subjects as to justify the Faculty in recommending them for the profession of teaching.

Students not graduates of the University completing this course will receive a statement of the fact, and be given proper credit for the work towards a degree.

The University Teachers' Certificate is recognized by the proper authorities in a number of states as sufficient evidence upon which to grant a teacher's license without further examination. Under section 10 (4792) of the school law of Nebraska as amended in 1897 the State Superintendent of Public Instruction is authorized to grant State Teachers' Certificates to such graduates of the University as have complied with the above requirements.

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## THE COURSE PREPARATORY TO LAW AND JOURNALISM

### REQUIREMENTS FOR ADMISSION

Applicants for admission to this course must meet the requirements for admission to the regular undergraduate courses.

The course presumes much more maturity and special preparation than is expected in those entering

the lower classes of the University, and students should consult the heads of the departments concerned before registering for the work.

## FIRST YEAR

### FIRST SEMESTER

American History, 3: 1785-1829 ..... 3 hours
English, 1 ..... 2 "
English 3 ..... 2 "
English Literature, 5: General English Literature ..... 3 "
or
Science: (Elective) ..... 2 "
Political Science, 1: Elementary Political Economy ..... 3 "
Political Science, 15: English Economic History ..... 3 "

### SECOND SEMESTER

American History, 4: 1829-1865 ..... 3 hours
English, 2 and 4 ..... 4 "
English Literature, 6: Continuation of Course 5 ..... 3 "
or
Science: (Elective) Continuation of work of first semester ..... 2 "
Political Science, 14 ..... 3 "
Political Science, 16: Economic History of the United States ..... 3 "

## SECOND YEAR

### FIRST SEMESTER

American History, 9: Constitutional History ..... 3 hours
American History, 11: Constitutional Law ..... 3 "
English, 11: Public Speaking (Law) ..... 2 "
or
English, 15: Journalism ..... 2 "
Philosophy, 3: Logic ..... 3 "
Political Science, 5; Financial History of the United States ..... 3 "
Political Science, 9: Municipal Government ..... 3 "

SECOND SEMESTER

American History, 10 .....3 hours
American History, 12 .....3 "
English: Continuation of work of first semester.....2 or 3 "
Philosophy, 4 .....2 "
Political Science, 10: Money, Banking, and Bimetallism..3 "
Political Science, 12: Taxation .....3 "

## THE PREMEDICAL COURSE

### REQUIREMENTS FOR ADMISSION

Applicants for admission to this course must pass satisfactory examinations in elementary English grammar, including spelling, capitalization, punctuation, and pronunciation; arithmetic; algebra complete, plane geometry; descriptive and physical geography; elementary United States history; elementary Latin and twenty-nine chapters of the first book of Caesar; and elementary botany, chemistry, and physics.

Some medical colleges in the country require a college degree for entrance, while in all the medical colleges the requirements are being steadily raised, and all students who can are advised to take the full college course (Industrial College Group 3) electing the subjects specified below.

There are some students, however, to whom the full college course is an impossibility. To such students this course offers that part of college training which is of great technical value, and which is most immediately connected with the subsequent work of the

medical school. The work outlined is in large part that which is included in the general study of the first year in the best schools.

Students who are registered in regular groups of the College of Literature, Science, and the Arts, or the Industrial College can elect this work, and, in such case, it is advisable to distribute the work of the two years outlined below over the four years of the college course, so far as possible.

### FIRST YEAR

#### FIRST SEMESTER

Botany, 1: Structural and Physiological, continued .....3 hours
Chemistry, 1: Study of the Metallic Elements .....2 "
English, 1: Rhetoric and English Composition .....2 "
Hygiene, 1 .....2 "
Physics, 1: Mechanics, Sound, and Heat .....3 "
Zoology, 1: General elementary course .....3 "
Zoology, 3: General Physiology .....2 "

#### SECOND SEMESTER

Botany, 2: Structural and Physiological, continued .....3 hours
Chemistry, 2: Study of the Metallic Elements, continued .....2 "
English, 2: Rhetoric and English Composition, continued .....2 "
Physics, 2: Mechanics, Sound, and Heat, continued .....3 "
Zoology, 2: General elementary course, continued .....3 "
Zoology, 8*a*: Osteology .....2 "
Zoology, 4: General Physiology, continued .....2 "

### SECOND YEAR

#### FIRST SEMESTER

Botany, 19: Pharmaceutical Botany .....2 hours
Chemistry, 3: Organic Chemistry .....3 "

Philosophy, 1: Introductory Course in Psychology .....3 hours
Physics, 3: Experimental Physics; continuation of Courses 1 and 2 .....2 "
Zoology, 5: Invertebrate Morphology .....4 "
Zoology, 9: Normal Histology .....2 "
Zoology, 13: Neurology .....2 "

SECOND SEMESTER

Botany, 20: Pharmaceutical, continued .....2 hours
Chemistry, 4: Organic Chemistry, continued .....3 "
Philosophy, 2: Introductory Course in Psychology, continued .....3 "
Physics, 4: Experimental Physics, continued .....2 "
Zoology, 8: Comparative Anatomy of the Vertebrates....4 "
Zoology, 10: Vertebrate Embryology .....2 "
Zoology, 14: Neurology .....2 "

Students completing this course will receive certificates of their proficiency, and by special arrangement are admitted (without preliminary or entrance examinations) to the third year and second course of lectures of the Cincinnati College of Medicine and Surgery; to the second year in the Boston University School of Medicine, the Medical School of the University of Pennsylvania, the Omaha Medical College, Creighton Medical College, Hahnemann Medical College and Hospital of Chicago, and the Northwestern Medical School (Chicago Medical College); and to the first year in the St. Louis Medical College, and the Department of Medicine and Surgery, University of Michigan.

### THE PREPARATORY MEDICAL SOCIETY

This society was organized for the encouragement of a medical school in the University at some future

time, and for the sake of placing in some united relationship with the other student bodies of the University, those students in the Premedical Course.

## THE COURSE IN PHYSICAL EDUCATION

Students not taking college degrees or holding such from institutions of equal rank, who are permitted to take the courses in Physical Education, will complete the work prescribed below. Such unclassed students will be required to take the following preparation for this course:

| | |
|---|---|
| Chemistry, 1 and 2 | 4-5 Courses |
| English, 1 and 2 | 4-5 " |
| Physics, 1 and 2 | 6-5 " |
| Military Drill, 1 and 2 | 2-5 " |
| Total | 3 1-5 " |

### PRESCRIBED WORK IN PHYSICAL EDUCATION FOR UNCLASSED STUDENTS

FIRST YEAR

*First Semester*

| | |
|---|---|
| English, —: (second year) | 3 hours |
| Hygiene, 1: Natural, Public, and Personal | 2 " |
| Physical Education-Theory, 1*a*: Measurements and Charts | 1 hour |
| Physical Theory, 3: Physiology of Bodily Exercise | 3 hours |
| Physical Practice, 13: Hygienic Gymnastics | 1 hour |
| Physical Practice, 19: Special Athletic Training | 1 " |
| Zoology, 1: Introductory Course | 3 hours |
| Zoology, 3: Physiology | 2 " |
| | 16 " |

*Second Semester*

English, —: (Second year) .....3 hours
Physical Education-Theory, 2: Measurements and Charts .....1 hour
Physical Theory, 10: Kinesiology .....3 hours
Physical Education-Practice, 14: Hygienic Gymnastics, continued .....1 hour
Physical Practice, 20: Special Athletic Training, continued .....1 "
Zoology, 2: Introductory Course, continued .....3 hours
Zoology, 4: Physiology, continued .....2 "
Zoology, 8*a*: Osteology .....2 "

16

SECOND YEAR

*First Semester*

Philosophy, 1: General Psychology .....3 hours
Physical Education-Theory, 5: Physical Diagnosis .....2 "
Physical Education-Theory, 3*a*: Training .....1 hour
Physical Education-Theory, 9: Methods and Equipment..2 hours
Physical Education-Theory, 11: History and Philosophy of Physical Education .....3 "
Physical Education-Practice, 15: Educational Gymnastics .....1 hour
Physical Education-Theory, 17: Leader's Practice .....1 "
Zoology, 11: Mammalian Anatomy .....3 hours

16

*Second Semester*

Pedagogy, 8: Educational Psychology .....2 hours
Philosophy, —: Physiological Psychology .....3 "
Physical Training-Theory, 6: Prescription of Exercise....2 "
Physical Training-Theory, 4: Emergencies .....1 hour
Physical Training-Theory, 12: Anthropometry .....3 hours
Physical Training-Practice, 16: Educational Gymnastics, continued .....1 hour

Physical Training-Theory, 18: Leader's Practice, continued ..... 1 hour
Zoology, 12: Mammalian Anatomy, continued ..... 3 hours

16

A University certificate of the completion of this course in Physical Education will be granted to graduates of the University who have satisfied all the requirements of the above courses and whose faithful work in general, special, and professional subjects proclaim them worthy to receive from the faculty such a recommendation. Graduates from other Universities and Colleges of equal rank with The University of Nebraska will receive a like certificate upon the same terms as graduates of this institution. Students not graduates of the University or of institutions of equal rank who complete this course will receive a statement to that effect and be given credit for the work towards a degree.

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1909/10
Univ. of Nebraska
Agriculture.

UNIVERSITY OF ILLINOIS

PRESIDENT'S OFFICE.

Series XIV. No. 8

# BULLETIN OF THE UNIVERSITY OF NEBRASKA

## THE COLLEGE OF AGRICULTURE

### ANNOUNCEMENT

### 1909-1910

UNIVERSITY OF ILLINOIS LIBRARY

April 15, 1909
THE UNIVERSITY PRESS
Lincoln, Nebraska

The Bulletin of the University of Nebraska is published semi-monthly between January 1 and October 1 of each year. Entered at the Post-office at Lincoln, Nebraska, as second class matter under act of Congress, July 16, 1894. One each is issued for the Graduate College, the College of Arts and Sciences, the Teachers College, the College of Agriculture, the College of Engineering, the College of Law, the College of Medicine, and the schools of Art, Agriculture, Mechanic Arts, Pharmacy, and Music. Also, the High School Manual. They are furnished gratuitously, postage paid, to all who apply for them. In asking for bulletins, name the department of the University concerning which information is desired. Address

THE REGISTRAR,
THE UNIVERSITY OF NEBRASKA,
Lincoln, Nebraska.

# CALENDAR FOR THE COLLEGE OF AGRICULTURE

## 1909

| | | |
|---|---|---|
| September 21 | Tuesday | First Semester begins. |
| September 21-25 | Tuesday-Saturday | Entrance examinations and registration. |
| September 25 | Saturday | Opening address by the Chancellor. |
| *November 1 | Monday | School of Agriculture, first term of 3-year course begins. |
| November 24 | Wednesday, 6 p. m. | Thanksgiving recess begins. |
| November 30 | Tuesday, 8 a. m. | Thanksgiving recess ends. |
| December 7 | Tuesday | Regular meeting of the Board of Regents. |
| December 17 | Friday, 6 p. m. | Christmas holidays begin. |

## 1910

| | | |
|---|---|---|
| January 4 | Tuesday, 8 a. m. | Christmas holidays end. |
| January 24-28 | Monday-Friday | First Semester examinations. |
| January 25-29 | Tuesday-Saturday | Entrance examinations and registration for the second Semester. |
| January 31 | Monday | Second Semester classes begin. School of Agriculture, second term of 3-year course begins |
| February 15 | Tuesday | Charter Day. A holiday. Regular meeting of the Board of Regents. |
| March 23 | Wednesday, 6 p. m. | Easter recess begins. |
| March 30 | Wednesday, 8 a. m. | Easter recess ends. |
| April 12 | Tuesday | Regular meeting of the Board of Regents. |
| April 22 | Friday | School of Agriculture, Commencement 3-year course |
| June 3-June 9 | Friday-Thursday | Second Semester examinations. |
| June 8-June 13 | Wednesday-Monday | Cadet Encampment. |
| June 13 | Monday, 4 p. m. | Final recommendations by faculties for degrees. |

## COMMENCEMENT WEEK.

| | | |
|---|---|---|
| June 12 | Sunday | Baccalaureate Sermon. |
| June 14 | Tuesday | Class Day. Regular meeting of the Board of Regents. |
| June 15 | Wednesday | Alumni Day. |
| June 16 | Thursday | Thirty-ninth Annual Commencement. |
| September 20 | Tuesday | First Semester begins (1910-1911). |

* A separate catalog is published of the three-year course in the School of Agriculture.

# THE UNIVERSITY

THE UNIVERSITY OF NEBRASKA includes the following colleges and schools:

THE GRADUATE COLLEGE. Courses leading to the degree of Master of Arts and Doctor of Philosophy. Work may be taken without reference to a degree.

THE COLLEGE OF ARTS AND SCIENCES. A four-year course leading to the degree of Bachelor of Arts or Bachelor of Science.

THE TEACHERS COLLEGE. A four-year course leading to the degree of Bachelor of Arts or of Bachelor of Science and the University Teachers' Certificate.

THE COLLEGE OF AGRICULTURE (including general and technical agricultural, forestry, and general home economics groups). A four-year course leading to the degree of Bachelor of Science.

THE COLLEGE OF ENGINEERING. A four-year course leading to the degree of Bachelor of Science in Engineering—Civil, Electrical, Mechanical. Also, a six-year Combined Academic-Engineering course.

THE COLLEGE OF LAW. A three-year course leading to the degree of Bachelor of Laws. A six-year course leading to the Bachelor of Arts degree in four years and to the degree of Bachelor of Laws in six years.

THE COLLEGE OF MEDICINE. A four-year course leading to the degree of Doctor of Medicine. A six-year course leading to the Bachelor's degree in four years and to the degree of Doctor of Medicine in six years.

THE SCHOOL OF PHARMACY. A four-year course leading to the degree of Bachelor of Science in Pharmacy. Also, two-year and three-year courses.

THE SCHOOL OF FINE ARTS. Instruction in drawing, painting, wood-carving, modeling, etching, and the history of art.

THE SCHOOL OF MUSIC. Affiliated with the University. Instruction in all grades of instrumental and vocal music.

THE SCHOOL OF AGRICULTURE. A secondary school training primarily for practical farm life.

THE SUMMER SESSION. A six weeks course primarily for teachers.

THE NEBRASKA EXPERIMENT STATION and the EXPERIMENTAL SUB-STATION at North Platte are also in charge of the Board of Regents.

# COLLEGE OF AGRICULTURE

## MEMBERS OF THE FACULTY

SAMUEL AVERY, PH.D.
Chancellor and President of the University Senate
Administration Hall 101

EDGAR ALBERT BURNETT, B.SC.
Dean of the College of Agriculture and Director of Experiment Stations
Agricultural Hall 203

CHARLES EDWIN BESSEY, PH.D., LL.D.
Head Professor of Botany and Head Dean in the University
Nebraska Hall 104

LAWRENCE BRUNER, B.SC.
Head Professor of Entomology and Acting State Entomologist
Nebraska Hall 303

ALBERT THEODORE PETERS, D.V.M.
Head Professor of Animal Pathology
Agricultural Hall 103

ALBERT EUGENE DAVISSON, A.B.
Head Professor of Agricultural Education
Agricultural Hall 207

HOWARD REMUS SMITH, B.SC.
Head Professor of Animal Husbandry
Agricultural Hall 103

ARCHIBALD LOUIS HAECKER, B.SC.A.
Head Professor of Dairy Husbandry
Dairy Hall

FREDERICK JAMES ALWAY, PH.D.
Head Professor of Agricultural Chemistry
Experiment Station Hall

ROLLINS ADAMS EMERSON, B.SC.
Professor of Horticulture
Horticultural Hall

ROSA BOUTON, A.M.
Professor of Home Economics
Home Economics Hall

FRANK J. PHILLIPS, M.F.
Professor of Forestry
Nebraska Hall 105

EDWIN MEAD WILCOX, PH.D.
Professor of Agricultural Botany
Agricultural Hall 307

LEON WILSON CHASE, B.SC.
Professor of Farm Mechanics.
Machinery Hall

*ALVIN KEYSER, A.M.
Professor of Soils

EDWARD GERRARD MONTGOMERY, A.M.
Professor of Experimental Agronomy
Experiment Station Hall

CAPT. HALSEY E. YATES, 17TH INF., U.S.A.
Commandant of Cadets and Professor of Military Science
Grant Memorial Hall

WILLIAM PATTON SNYDER, A.B., M.S.
Superintendent North Platte Experimental Substation

CHARLES WILLIAM PUGSLEY, B.SC.
Professor of Instructional Agronomy and Farm Management
Experiment Station Hall

GEORGE EVERT CONDRA, PH.D.
Professor of Geography and Economic Geology
University Hall 7

JAMES HARRISON GAIN, M.D.C.
Associate Professor of Animal Pathology
Agricultural Hall 103

VAL KEYSER, B.SC.
Superintendent of Farmers' Institutes
Agricultural Hall 205

†ANNETTE ELIZABETH PHILBRICK, B.SC.
Associate Professor of Home Economics
Home Economics Hall

* Resigned.
† Leave of absence, 1909-1910.

HARRIET FOLGER
Associate Professor of Home Economics
Home Economics Hall

JULIA EMMELINE LOUGHRIDGE, A.B.
Assistant Principal of the School of Agriculture and Adjunct Professor of Mathematics
Agricultural Hall 207

ROLAND ELISHA STONE, M.Sc.
Assistant Professor of Agricultural Botany
Agricultural Hall 307

LAZELLE BRANTLEY STURDEVANT, A.M., M.D.
Assistant Professor of Animal Pathology
Veterinary Hall

## ADJUNCT PROFESSORS, INSTRUCTORS, AND ASSISTANTS IN THE COLLEGE OF AGRICULTURE

MYRON HARMON SWENK, A.M.
Adjunct Professor of Entomology and Assistant State Entomologist
Experiment Station Hall

VERNON VILAS WESTGATE, B.Sc.
Adjunct Professor of Horticulture
Horticultural Hall

PERCY BONSFIELD BARKER, A.B.
Adjunct Professor of Soils
Experiment Station Hall

ELLIS RAIL, B.Sc.A.
Adjunct Professor of Animal Husbandry
Agricultural Hall 104

ROBERT CHILDERS ASHBY, B.Sc.
Adjunct Professor of Animal Husbandry
Agricultural Hall 104

ROBERT FRANCIS HOWARD, B.S. in Agr.
Adjunct Professor of Horticulture
Assistant Horticulturalist in Experiment Station
Horticultural Hall

ROBERT SAMUEL TRUMBULL, A.M.
Adjunct Professor of Agricultural Chemistry
Experiment Station Hall

FLORA BULLOCK, A.M.
Instructor in English. Agricultural Hall 109

ALVA ALDUS BAER
Instructor in Wood Work — Machinery Hall

MARY VIRGINIA ZIMMER, A.B.
Instructor in Mathematics and Physics
Agricultural Hall 102

MILDRED POST, A.B.
Instructor in Home Economics
Home Economics Hall

ELLA BRADFORD HARPER, A.B.
Instructor in Home Economics
Home Economics Hall

GRACE GOLDENA DENNY, A.B.
Instructor in Home Economics
Home Economics Hall

GLAIDETH DENNY, A.B.
Assistant in German and History
Agricultural Hall 204

EDNA CLARA NOBLE, B.L.
Library Assistant — Agricultural Hall

MRS. JENNIE CHAMBERLAIN HOSFORD
House Supervisor — Home Economics Hall

CLAUDE KEDZIE SHEDD, A.B.
Instructor in Farm Machinery — Machinery Hall

SAMUEL McKELVIE
Lecturer in Swine Judging
Agricultural Hall 103

ERWIN HOPT, B.Sc.
Assistant Instructor in the School of Agriculture
Experiment Station Hall

MRS. VADA CLEGG VENNUM
Assistant Registrar, School of Agriculture
Agricultural Hall 207

## STANDING COMMITTEES OF THE FACULTY

Course of Study—Professor Davisson (chairman), Professors Bouton, Bruner, Chase, Phillips, Pugsley, Smith, Wilcox, and Mrs. Vennum (secretary).

Delinquent Students—Professor Chase (chairman), Professors Haecker, Montgomery, Phillips, and Loughridge (secretary).

Farmers' Institutes—The Dean (chairman), Professors Haecker, Peters, Pugsley, Keyser (secretary).

Schedule of Classes—Professor Smith (chairman), Professors Chase, Pugsley.

## ORGANIZATION

The College of Agriculture was established by an act of the Legislature of 1909, in a reorganization of the colleges within the University. The purpose of this College is to provide thorough instruction in the technical agricultural sciences related to agriculture, forestry, and the household arts, and to aid in the promotion of agriculture through the secondary School of Agriculture and through its Experiment Station and Farmers' Institute work.

This College includes the agricultural courses and the courses in home economics formerly offered in the Industrial College, and the course in Forestry which was formerly offered in the College of Literature, Science, and the Arts. The college courses consist of four general Groups—the General Agricultural Group, the Technical Agricultural Group, the Technical Forestry Group, and the Home Economics Group.

## GENERAL AGRICULTURAL GROUP

The General Agricultural Group meets the needs of those students who desire to make practical application of their education in the management of land or who wish to prepare themselves for the pursuit of scientific investigation along some line in agriculture, such as agricultural botany, agricultural chemistry, agronomy, animal husbandry, animal pathology, dairy husbandry, entomology, forestry, horticulture, and other technical subjects related thereto. This group should also appeal to those who desire to prepare themselves for teaching in high schools or in

agricultural colleges and who desire special agricultural training to meet the demands of the schools requiring that instruction be given in agriculture. As a course in general education for students who expect to follow business pursuits or to continue still further the study of some technical agricultural subject, this course is offered as a suitable foundation. To those who desire an education which will put them in touch with the leading industrial activities of the State, the General Agricultural course will also prove most efficient.

## TECHNICAL AGRICULTURAL GROUP

The Technical Agricultural Group is primarily designed for those graduates of the University School of Agriculture who desire to pursue a college course. All such students are admitted to this group without examination. This group has also been planned to give the largest amount of technical instruction upon agricultural subjects in a given time, with somewhat less opportunity to pursue general academic subjects than is afforded in the General Agricultural course. It is intended to offer in this course the largest amount of technical instruction consistent with correct educational ideals, and to fit men for the largest degree of efficiency in agricultural pursuits.

## TECHNICAL FORESTRY GROUP

This group is arranged to enable young men to fit themselves for practical work in forestry. The studies are largely biological. Much attention is given to plants in general and to trees in particular. The soil in its relation

to vegetation, and the relations of climate and rainfall to the forest covering of the country, receive attention. The sciences underlying forestry are followed by studies in technical forestry. During the course, opportunity is given to spend one or more summers in some of the Government forest reserves. The students electing this course should have had preparatory botany. Graduates from other college courses who have had sufficient collateral work may complete the course in one year.

## HOME ECONOMICS

The instruction in this department relates to the practical problems of home life. Special attention is given to the artistic, economic, and sociological problems which form a legitimate part of this work. Instruction is given by the lecture-laboratory method. The Home Economics course includes studies in natural sciences, language, history, physical training, and other general subjects intended to afford a good general education, while giving special efficiency in household arts and sciences.

## FACILITIES FOR INSTRUCTION

To illustrate properly the work in the various departments in agriculture, the college is provided with a farm of 320 acres which is used for experimental purposes and to illustrate methods in farm practice, showing the effect of rotations and methods of treatment on the physical and chemical properties of the soil and on its productiveness. The department of Horticulture maintains an extensive orchard and garden for demonstrating horticultural methods

and practices. The departments of Animal Husbandry and Dairy Husbandry keep extensive herds for instruction in types of farm animals.

The agricultural plant, aside from lands, consists of eight main buildings and several barns and accessory buildings to complete the work and efficiency of the plant. Agricultural Hall is used for administration, library, and laboratories in Agricultural Botany. Experiment Station Hall furnishes laboratories for Soils, Entomology, and Agricultural Chemistry. The Judging Pavilion furnishes stock judging laboratories and grain judging laboratories, with exceptional facilities for work. The Agricultural Engineering building furnishes laboratories in forge work, wood work, and farm machinery. Horticultural Hall is devoted to laboratories and class rooms for horticultural instruction. Dairy Hall furnishes laboratories for instruction in buttermaking and cheesemaking, supplemented by a herd of exceptional efficiency to demonstrate the best dairy practice. Home Economics Hall furnishes laboratories for instruction in cooking and in household art. All of the technical departments giving instruction have excellent laboratory facilities and depend upon the laboratory method to give definiteness and efficiency to their instruction.

## ADMISSION

Candidates are admitted by examination or on certificate from accredited high schools, academies, or colleges. Women are admitted on the same terms as men. The requirements for admission are stated below.

Although properly prepared students who cannot enter at the beginning of the year may be admitted later, all

students who can possibly do so are urged to be present at the beginning of the year. Students entering late are at much disadvantage and cannot expect to finish the course within the minimum limit except by taking work in the Summer Session.

Applicants for admission present themselves to the Registrar, who furnishes them with application blanks and directions for proceeding with their examinations, if any, with fee payments and registration.

An applicant presenting a certificate from an accredited school, academy, or high school is admitted without examination to any classes for which he is fully prepared. Any candidate for admission bringing credentials from a high school, college, or university not included in the list of schools accredited to this University must, upon making application, present his credentials to the Registrar and be prepared to take such examinations as are prescribed.

A student desiring to ascertain whether or not he can be admitted to the first year without examination should apply to the Registrar for blank credential slips. When these are properly filled out and returned, he will be informed at once whether his credentials are or are not acceptable.

### ADMISSION REQUIREMENTS

For admission to the freshman class in 1909-1910 the candidate must present entrance "credits" equal to 28 "points," that is, a total of 140 recitation or "credit" hours.

Condidtional admission is permitted on a minimum of 22 "points," or 110 hours. A student admitted conditionally must remove the conditions at the earliest possible oppor-

tunity. The degree will not be granted until such conditions are removed.

A "credit point" means the work of five recitations a week, of not less than forty minutes each, for at least eighteen weeks. The time element with each subject is essential.

### REQUIRED SUBJECTS—17 Points

Algebra (through Logarithms), 1½ years, 5 hours a week..... 3
Rhetoric and Literature, 2 years, 5 hours a week..... 4
Geometry (plane and solid), 1½ years, 5 hours a week..... 3
Language (French, German, Greek, Latin—not more than 2 of these subjects), 2 years, 5 hours a week..... 4
Natural Science (Botany, Zoology), ½ year, 5 hours a week..... 1
Physical Science (Chemistry, Physics), 1 year, 5 hours a week..... 2

### OPTIONAL SUBJECTS—11 Points

In addition to these required subjects, for which no substitutes are accepted, applicants must present eleven points from the following optional subjects:

Rhetoric and Literature, 1 year, 5 hours a week..... 2
History (general or American), 3 years, 5 hours a week.....1 to 6
Language (ancient or modern), 3 years, 5 hours a week.....2 to 6
Manual Training, 1 year, 5 hours a week.....1 or 2
Mechanical Drawing, ½ year, 5 hours a week..... 1
Natural Science (Botany, Zoology), 1 year, 5 hours a week.....1 or 2
Physical Science (Chemistry, Physics), 1 year, 5 hours a week....1 or 2
Trigonometry (plane), ½ year, 5 hours a week..... 1

Astronomy
Civics
Geology
Physical Geography
Physiology and Hygiene
Political Economy
} Not more than 3 accepted..... 3

All students who have completed the three-year course in the School of Agriculture shall be admitted to the Tech-

nical Agricultural Group in the College of Agriculture without examination. Young women graduating in Home Economics in the school shall be admitted to the Home Economics group in the College of Agriculture also without examination. To all others the requirements for admission are the same as for the other groups in the College.

For admission to the freshman class after September 1, 1910, the candidate must present entrance "credits" equal to 30 "points," that is, a total of 150 recitations or "credit" hours.

Conditional admission is then permitted on a minimum of 24 "points," or 120 hours.

Effective on this date, the entrance requirements are as follows:

**REQUIRED SUBJECTS—17 Points**

Algebra (thorough Logarithms), 1½ years, 5 hours a week..... 3
Rhetoric and Literature, 2 years, 5 hours a week..... 4
Geometry (plane and solid), 1½ years, 5 hours a week..... 3
Language (French, German, Greek, Latin—not more than 2 of these subjects), 2 years, 5 hours a week..... 4
Natural Science (Botany, Zoology), ½ year, 5 hours a week..... 1
Physical Science (Chemistry, Physics), 1 year, 5 hours a week..... 2

**OPTIONAL SUBJECTS—13 Points**

In addition to these required subjects, for which no substitutes are accepted, applicants must present eleven points from the following optional subjects:

*Rhetoric and Literature, 1 year, 5 hours a week..... 2
History (general or American), 3 years, 5 hours a week.....1 to 6
Language (ancient or modern), 3 years, 5 hours a week.....2 to 6
Manual Training, 1 year, 5 hours a week.....1 or 2

* Two years or 4 points are allowed only to schools named by the Accredited Schools Committee.

| | | |
|---|---|---|
| Mechanical Drawing, ½ year, 5 hours a week | | 1 |
| Natural Science (Botany, Zoology), 1 year, 5 hours a week | | 1 or 2 |
| Physical Science (Chemistry, Physics), 1 year, 5 hours a week | | 1 or 2 |
| Trigonometry (plane), ½ year, 5 hours a week | | 1 |
| Astronomy<br>Bookkeeping<br>Civics<br>Geology<br>Physical Geography<br>Physiology and Hygiene<br>Political Economy | Not more than 4 accepted | 4 |

## REGISTRATION

Five days are allowed for the registration of students—from 9 a. m. Tuesday to 5 p. m. Saturday—for both the first and second semesters.

Students are required to register promptly at the beginning of each semester.

To promote prompt registration a registration fee of $3 is charged a student who, without good reason, fails to register within the days set aside for this purpose. A like fee is charged for re-registration if made necessary by the student's fault. Any change whatever in a registration once made is regarded as a re-registration.

No regular student is registered for less than twelve (12) hours nor more than eighteen (18) hours a semester without the Dean's permission.

The satisfactory completion of 125 college hours above full entrance requirements is required for graduation.

Students, not candidates for degrees, may register in the College of Agriculture without conforming to the entrance requirements. The admission of special students is permitted after consultation with and upon the recom-

mendation of the Dean. Such students must pay all necessary fees.

Upon fulfilling the entrance requirements, special students may register as regular students, and become candidates for the degree.

Students cannot attend classes for which they are not registered and credit is not granted for studies pursued without registration.

No student is allowed to change from one college to another without written permission to the Registrar signed by the dean of each college concerned. A student so changing college must also pay a new matriculation fee of $5.

No student may change his group or drop any study for which he has been regularly registered without written permission from the Dean.

Any change in a student's residence must be immediately reported to the Registrar.

A leave of absence for a short time may be granted a student by the Dean. This leave is merely a justification for absence and not an excuse from any work.

If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a semester, the Registrar grants him permission to do so. Students in good standing who are not minors are given honorable dismissal from the University at their own request; minors, at the request of their parents or guardians.

## FEES AND EXPENSES

All fees and charges are payable in advance to the Secretary of the University. No part of the fees can be refunded

to a student who leaves after the beginning of the fourth week of a semester or session. Any refunds should be called for at the time of withdrawal from a class or from the University.

The matriculation fee, being a statutory one, cannot be refunded except where collected through error.

The schedule of fees in the College of Agriculture is as follows:

### MATRICULATION

Matriculation ..... $5

This fee is charged to each student upon first entering, and is also charged each student changing membership from one college to another.

### NON-RESIDENT

Non-resident fee, each semester..... $15

This fee is charged to each person not a resident of the state on registering as a student in this college.

### INCIDENTAL

Incidental fee, each semester..... $3

### LIBRARY

Library fee, each semester..... $1

This fee is charged to each student who does not pay a laboratory fee.

### LABORATORY

The laboratory fees vary according to the individual courses taken, and are charged to cover the cost of the material used.

### SPECIAL REGISTRATION

Special registration fee..... $3

This fee is charged to any student not excused for cause by the Chancellor, who for any reason seeks to register or

re-register later than the fifth week day of any semester. Any modification whatever of a registration is regarded as a re-registration.

### SPECIAL EXAMINATIONS

| | |
|---|---|
| Each course, general colleges | $1 |

### DIPLOMA

| | |
|---|---|
| Diploma fee, first degree | $5 |
| Diploma fee, advanced degree | 10 |
| Diploma fee, *in absentia*, additional | 10 |
| Certificates | 1 |

No person is granted a degree until he has paid all dues, including the fee for diploma.

### EXPENSES

In Lincoln board and lodging may be secured in private families for from $3 to $5 a week. There are also numerous student clubs. The Young Men's Christian Association and the Young Women's Christian Association of the University keep lists of boarding places. The Young Men's Christian Association of the University also maintains under the direction of the Registrar an employment bureau, the services of which are free to all students. In a city the size of Lincoln there are many opportunities for students to defray at least a part of their expenses. The University does not, however, guarantee employment.

## COLLEGE REQUIREMENTS

### MAJOR SUBJECTS REQUIRED FOR GRADUATION

Upon entering his junior year a student must choose a major subject and must offer at least ten hours credit in the department in which this major subject is chosen before he shall be recommended for graduation.

Registration in agricultural subjects must be made by the student at the beginning of the year in which the subjects are taken.

## THE GENERAL AGRICULTURAL GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Animal Husbandry 1, 3 | 4 | |
| Dairy Husbandry 2 | | 4 |
| *Chemistry 1, 2 (A and S) | 2 | 2 |
| *French or German (A and S) | 5 | 5 |
| Botany 1, 2 | 3 | 3 |
| *Rhetoric 1, 2 (A and S) | 2 | 2 |
| Military Drill | 1 | 1 |
| | 17 | 17 |
| **SECOND YEAR** | | |
| Horticulture 1 | 3 | |
| Horticulture 2, or Animal Husbandry 5 and Animal Pathology | | 3 |
| *Physics 1, 2 (A and S) | 3 | 3 |
| *Rhetoric 5, 6 (A and S) | 3 | 3 |
| *Mathematics 1 (A and S) | 5 | |
| Agronomy 1, 2 | | 4 |
| *Geography 1, 28 (A and S) | 2 | 2 |
| Military Drill | 1 | 1 |
| | 17 | 16 |
| **THIRD YEAR** | | |
| Agronomy 7, 9 | 4 | |
| Agronomy 3 | | 2 |
| Forestry 1 | 2 | |
| *Geography 4 (A and S) | | 2 |
| *English Literature 1, 2 (A and S) | 3 | 3 |
| Electives, at least ½ Agricultural Subjects | 6 | 8 |
| | 15 | 15 |
| **FOURTH YEAR** | | |
| †Agricultural Subjects | 6 | 6 |
| Political Economy (A and S) | 3 | |
| Agricultural Economics | | 3 |
| Electives | 5 | 5 |
| | 14 | 14 |

* Required courses not given in the College of Agriculture are marked with the initials of the college in which they are offered; *e. g.*, (A and S) indicates that the subject is offered in the College of Arts and Sciences.

† The "Agricultural Subjects" include Agricultural Botany, Agricultural Chemistry, Agricultural Geology, Agronomy, Animal Husbandry, Dairy Husbandry, Forestry, Horticulture, Economic Entomology, Farm Mechanics, Agricultural Pedagogy.

## *THE TECHNICAL AGRICULTURAL GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Chemistry 1, 2 (A and S) | 2 | 2 |
| †Agricultural Subjects | 3 | 3 |
| Botany 1, 2 | 3 | 3 |
| Rhetoric 1, 2 (A and S) | 2 | 2 |
| French or German (A and S) | 5 | 5 |
| Military Drill | 1 | 1 |
| | 16 | 16 |
| **SECOND YEAR** | | |
| †Agricultural Subjects | 2 | 2 |
| Science | 5 | 5 |
| ‡French or German (A and S) | 5 | 5 |
| Rhetoric 5, 6 (A and S) | 3 | 3 |
| Military Drill | 1 | 1 |
| | 16 | 16 |
| **THIRD YEAR** | | |
| †Agricultural Subjects | 5 | 5 |
| Science | 5 | 5 |
| Literature (A and S) | 5 | 5 |
| | 15 | 15 |
| **FOURTH YEAR** | | |
| †Agricultural Subjects (Including Thesis) | 5 | 5 |
| Political Economy (A and S) | 3 | |
| Agricultural Economics | | 3 |
| Electives | 8 | 7 |
| | 16 | 15 |

* In order to graduate from this course students must have forty (40) hours in Agricultural Subjects, including those accepted for entrance credits. (A and S) indicates that the subject is offered in the College of Arts and Sciences.

† The "Agricultural Subjects" include Agricultural Botany, Agricultural Chemistry, Agricultural Geology, Agronomy, Animal Husbandry, Dairy Husbandry, Forestry, Horticulture, Economic Entomology, Farm Mechanics, Agricultural Pedagogy.

‡ Students who have entrance credit for one year of language may elect Agricultural Subjects in lieu thereof.

## THE TECHNICAL FORESTRY GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Modern Language | 5 | 5 |
| General Botany 1, 2 | 3 | 3 |
| Chemistry 1, 2 | 2 | 2 |
| Rhetoric 1, 2 | 2 | 2 |
| Forestry 1 | 2 | |
| General Entomology 1, 2 | 2 | 2 |
| Meteorology (Geography 4) | | 2 |
| Military Drill | 1 | 1 |
| | 17 | 17 |

| SECOND YEAR | | |
|---|---|---|
| Systematic Botany 13, 14 | 2 | 4 |
| Physics 1, 2 | 3 | 3 |
| Horticulture 1, 2 | 3 | 3 |
| Rhetoric 5, 6 | 3 | 3 |
| Mathematics 1 | 5 | |
| Botany 34 (Study of Woods) | | 2 |
| Military Drill | 1 | 1 |
| | 17 | 16 |

| THIRD YEAR | | |
|---|---|---|
| Botany 19, 20 | 5 | 5 |
| Forestry 3, 4 | 3 | 3 |
| Civil Engineering 5, 30 (Surveying) | 4 | 2 |
| Applied Mechanics 19, 20 (Timber Physics) | 2 | 2 |
| Geography 1, 2 | 2 | 2 |
| Electives | | 1 |
| | 16 | 15 |

| FOURTH YEAR | | |
|---|---|---|
| Forestry 5, 6 | 2 | 2 |
| Forestry 7, 8 | 2 | 2 |
| Political Economy 1 | 3 | |
| Soils 1, 3 | 2 | 2 |
| General Geology 1, 28 | 3 | 2 |
| Entomology 11 | 2 | |
| Botany 41 (Dendrology) | | 3 |
| Thesis | | 2 |
| | 14 | 13 |

## THE GENERAL HOME ECONOMICS GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Rhetoric 1, 2 | 2 | 2 |
| Language (Ancient or Modern) | 5 | 5 |
| Chemistry 1, 2 | 2 | 2 |
| History | 3 | 3 |
| Home Economics 1, 2 | 3 | 3 |
| Physical Training | 1 | 1 |
| | 16 | 16 |
| **SECOND YEAR** | | |
| Home Economics 3, 4 | 3 | 3 |
| Chemistry 3, 4 | 3 | 3 |
| Botany 1, 2 | 3 | 3 |
| Language (Ancient or Modern) | 3 to 5 | 3 to 5 |
| Rhetoric or English Literature | 4 to 2 | 4 to 2 |
| Physical Training | 1 | 1 |
| | 17 | 17 |
| **THIRD YEAR** | | |
| Home Economics 5, 6 | 3 | 3 |
| Chemistry of Food 13, 14 | 3 | 3 |
| Physical Education 1, 6a | 2 | 2 |
| Electives | 4 | 5 |
| Philosophy 1, 6 | 3 | 2 |
| Rhetoric, Two Themes | | |
| | 15 | 15 |
| **FOURTH YEAR** | | |
| Home Economics 7, 8 | 3 | 3 |
| Home Economics 9, 10 | 3 | 3 |
| Electives | 9 | 9 |
| Rhetoric, One Theme | | |
| | 15 | 15 |

## INSTRUCTION GIVEN AT THE UNIVERSITY FARM

Instruction in Agricultural Botany, Agricultural Chemistry, Agronomy, Animal Husbandry, Dairy Husbandry, Entomology, Home Economics, and Horticulture is given at the University Farm, where special laboratories and equipment are available for this work.

# COURSES OF INSTRUCTION

## THE COLLEGE OF AGRICULTURE

Students are advised to consult the heads of departments before registering.

For courses that may be chosen to apply as "Electives" see the general "Courses of Instruction" of the College of Arts and Sciences, the College of Engineering, and the Teachers College.

Courses included between brackets are not given in 1909-1910.

### AGRICULTURAL BOTANY

PROFESSOR WILCOX, ASSISTANT PROFESSOR STONE

FOR UNDERGRADUATES AND GRADUATES

1. **Elementary Plant Pathology**—A broad survey of the development and present condition of our knowledge of plant disease. Special attention will be given to diseases having their origin in malnutrition and unfavorable chemical and physical factors. The most typical and important diseases of our leading cultivated plants will be described in some detail.

   The laboratory work will acquaint the student with the current technique including the preparation and use of culture media, the establishment of pure cultures and artificial inoculation. Three hours lecture. Six hours laboratory. Three hours credit. Students are advised to take Botany 15, 16 and 19, 20 before or with this course. PROFESSOR WILCOX

2. **Elementary Plant Pathology**—1 continued. Second semester.

3. **General Plant Pathology**—Prerequisite, Agricultural Botany 7, 8. An advanced course of lectures designed to furnish such a broad

working basis as to enable one to engage in original research in plant pathology. The following are some of the subjects to be discussed; the physiology and cytology of resistance and immunity, origin of parasitism, specialization, epidemics and climatic factors, etc. Two hours lecture. Four hours reading. Two hours credit. First semester. PROFESSOR WILCOX

4. **General Plant Pathology**—3 continued. Second semester.

5. **Seed Testing**—Methods of seed analysis including quantitative and qualitative methods of making purity determinations. Identification of foreign seeds. Liability and purity tests of the seeds of the principal cereals, forage crops, and horticultural crops. Two hours credit. First semester. PROFESSOR WILCOX

6. **Seed Testing**—5 continued. Second semester.

7. **Forest Plant Pathology**—A special course designed to furnish information as to the principal diseases of forest trees. Three hours lecture. Four hours laboratory. Three hours credit. First semester. PROFESSOR WILCOX

FOR GRADUATES

9. **Problems in Plant Pathology**—Prerequisite: Agricultural Botany 7, 8 and 9, 10. Assigned problems in plant pathology. Laboratory work with hours for consultation. Two to five hours credit. First semester. PROFESSOR WILCOX

10. **Problems in Plant Pathology**—9 continued. Second semester.

11. **Problems in Plant Physiology**—Assigned problems in the nutrition, growth, irritability or reproduction of plants. Laboratory work with hours for consultation. Two to five hours credit. Prerequisite: Agricultural Botany 3 or Botany 19, 20. PROFESSOR WILCOX

12. **Problems in Plant Physiology**—11 continued. Second semester.

SCHOOL OF AGRICULTURE

A. **Elementary Agricultural Botany**—Elementary study of types of plants selected as far as possible with reference to their economic importance in agriculture. One hour lecture. Four hours laboratory. Three hours credit. First semester. PROFESSOR WILCOX, ASSISTANT PROFESSOR STONE

B. **Elementary Agricultural Botany**—A continued. Second semester.

C. **Elementary Plant Physiology**—An elementary study of the growth, nutrition, irritability and reproduction of plants with special reference to the application of these facts to plant culture. Two hours lecture. Two hours laboratory. Two hours credit. First semester. PROFESSOR WILCOX

D. **Elementary Plant Pathology**—An elementary study of the more common diseases of cultivated plants; the best methods of controlling these by spraying, proper methods of cultivation, use of resistant varieties, etc., will be discussed. Two hours laboratory. Two hours lecture. Second semester. PROFESSOR WILCOX

E. **Home Economics Botany**—An elementary study of the bacteria, yeasts and fungi in the home. Two hours lecture. Four hours laboratory. Three hours credit. First semester.
PROFESSOR WILCOX, ASSISTANT PROFESSOR STONE

F. **Home Economics Botany**—An elementary study of the microscopy and adulteration of vegetable food products. Two hours lecture. Four hours laboratory. Second semester.
PROFESSOR WILCOX, ASSISTANT PROFESSOR STONE

## GENERAL BOTANY

HEAD PROFESSOR BESSEY, ADJUNCT PROFESSOR POOL, MISS WALKER

1. **General Botany**—Introduction to structure of plants (cells, tissues, tissue systems). General morphology and physiology of representative species, including blue-green and green algae. Three hours lecture and additional readings. Four hours laboratory. Three hours credit. First semester.
HEAD PROFESSOR BESSEY, MISS WALKER

2. **General Botany**—The general morphology and physiology of representative species of brown algae to flowering plants. Three hours lecture and additional readings. Four hours laboratory. Three hours credit. Second semester.
HEAD PROFESSOR BESSEY, MISS WALKER

13. **Flowering Plants**—Principles of classification, and their application to the Monocotyledons. Two hours lecture. Four to twenty hours laboratory work in the field and herbarium. Two to six hours credit. First semester. HEAD PROFESSOR BESSEY

14. **Flowering Plants**—Principles of classification, and their application to the Dicotyledons. Otherwise as in course 13. Second semester. HEAD PROFESSOR BESSEY

19. **Plant Physiology**—An introductory study of the processes and functions of plants. Including imbibition; osmosis; absorption; the relation of the soil and of solutes to the plant; the movement of substances in the plant body; transpiration; stomatal relations; maintenance of bodily form; turgor; secretion; waste products. Three hours attendance. Six hours laboratory. Three hours credit. First semester. ADJUNCT PROFESSOR POOL

20. **Plant Physiology**—Photosynthesis; the question of the manufacture and assimilation of foods; the storage and digestion of foods; respiration; growth and movement with special reference to the influence of external factors upon these phenomena; irritability; stimulus and response; death of plants. Three hours attendance. Three hours credit. Six hours laboratory. Second semester. ADJUNCT PROFESSOR POOL

34. **The Study of Woods**—Structure, growth-rings, heart wood, sap wood, soft woods, hard woods, porosity, grain, knots, density, durability. Two hours lecture. Two to four hours laboratory. Two hours credit. Second semester. INSTRUCTOR ————

36. **Dendrology**—Review of the morphology and physiology of the tree. Forest regions, forest types, and forest trees of North America. Biological relations. Distribution. Economic importance. Three hours attendance. Six hours in the laboratory, field, and herbarium. Three hours credit. Second semester.
INSTRUCTOR ————

## AGRICULTURAL CHEMISTRY

HEAD PROFESSOR ALWAY, ADJUNCT PROFESSOR TRUMBULL

All courses in the department are given in the Chemical laboratories in Experiment Station Hall.

**Undergraduate Work**—Courses 4 and 6 are open to undergraduates who previously have had sufficient training in chemistry. On account of the varied nature of the problems presenting themselves in agricultural chemistry students are urged to acquire as thorough a training as possible in inorganic, organic, analytical, and physical chemistry before

specializing in this department. Only those whose training in pure chemistry has been thorough may hope to succeed in dealing with problems in agricultural chemistry.

**Graduate Work**—The courses outlined below may be taken as graduate work. In addition to these graduate students may select problems in the chemistry of soils or in the chemistry of plants. The nature of the problem assigned to any particular student depends both upon his previous training and upon the lines of investigation in progress at the Experiment Station. The candidates for an advanced degree should have completed courses 3, 4, 7, 8, 15, 25 and 27 in chemistry as well as courses 4 and 6 in agricultural chemistry.

### COURSES

4. **Analysis of Agricultural Products**—A course in the quantitative analysis of grains, flours, fruits, dairy products, sugar beets and fodders. Prerequisite: courses 1, 2, 3, 4, 7 and 8 in Chemistry, or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester. HEAD PROFESSOR ALWAY

6. **Analysis of Soils and Fertilizers**—A course in the quantitative analysis of soils, fertilizers. Prerequisite: courses 1, 2, 7 and 8 in Chemistry, or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester.
HEAD PROFESSOR ALWAY

### SCHOOL OF AGRICULTURE COURSES

A. **Elementary Agricultural Chemistry**—General principles of chemistry. Special emphasis upon chemistry of agriculture. Three hours attendance. Six hour laboratory. Three hours credit. First semester.
HEAD PROFESSOR ALWAY, ADJUNCT PROFESSOR TRUMBULL

B. **Elementary Agricultural Chemistry**—A continued. Second semester.

## AGRICULTURAL EDUCATION

### I. AGRICULTURAL ECONOMICS

HEAD PROFESSOR DAVISSON

Beginning by calling attention to the fact that Agricultural Economics consists in applying the principles of general economics to

the production, distribution, and consumption of agricultural wealth, the course deals with:

The factors of agricultural production; the economic properties of the factors of production; the guiding principle in the organization of the farm; the organization and size of the farm; the forces and conditions which determine the prices of agricultural products; the distribution of wealth with especial reference to the rent of farm land and to the conditions which enable farmers to save from their earnings; the principles to be followed in estimating the value of farm land and equipment.

All conditions which contribute to the efficiency of labor are considered; these include careful consideration of those things which must characterize rural environment in order that the health of the dwellers therein may be assured and their strength be of that quality so essential to him who works on the farm; the mental qualities which must be looked for in farm laborers and what sort of educational material must be provided in order that ideal mental qualities may be induced; agricultural education is discussed as a means by which the efficiency of those who work on the farm may be increased; how the principles of division of labor may be used on the farm is given careful treatment. The systems of distribution by which farm labor may be reimbursed for the sacrifices made are discussed with a view to determining whether cooperation between employer and laborer is an advantage to agricultural production or the contrary.

The law of diminishing returns from the land is discussed under the eight topics usually assigned by Economists as a means by which its operation may be in a measure prevented; the connection between it and the Law of Malthus is emphasized and here again agricultural education is discussed with reference to its necessity for people in general in order that the proper foundations of an enduring civilization may be laid.

The last general subject to be considered is distribution. The systems of distribution are carefully defined and the student is led to determine which in his opinion is the best. The marketing of farm products is given careful consideration. Whether agricultural products should find a home market or an international one is given detailed discussion. The ultimate system of distribution and of agricultural industry that must be adopted in order that the highest agricultural

development may take place is considered as carefully as time will permit.

Rural sociology is investigated and all phases of rural life studied for the purpose of giving the student an adequate notion of what conditions now prevail in rural communities, and of what should be done in order to improve and make them ideal.

Senior year. Second semester. Three hours attendance. Three hours credit.

### II. AGRICULTURAL PEDAGOGY

HEAD PROFESSOR DAVISSON

The subject matter which characterizes the various subjects for instruction in agriculture is given careful consideration, the first purpose being to give the student, even though he has not taken all the subjects known as agricultural, a general concept of what agricultural education means.

Each subject is then taken up and discussed with the view of determining its educative value. In this portion of the subject the student must become familiar with the elementary terms used in educational psychology.

The best methods of imparting instruction in agricultural subjects to rural and to high school students are then considered. The knowledge which should precede the study of every agricultural subject is carefully discussed, for too often attempts are made by teachers in rural schools to give agricultural instruction without having built a proper foundation.

The time which should be devoted to agriculture in the rural schools and in the high school and what materials can best be used for instruction are discussed, and an attempt is made to formulate a rational system of instruction which will, with the ordinary scientific subjects of the high school, constitute an organic whole.

Senior year. First semester. Two hours attendance. Two hours credit.

## AGRONOMY AND FARM MANAGEMENT

PROFESSOR PUGSLEY, (PROFESSOR MONTGOMERY,) ADJUNCT PROFESSOR BARKER, MR. HOPT

Students should have at least one year's work in Botany, Chemistry and Geology. Courses are offered to meet the needs of (1) those students taking general cultural courses, or interested in farm operations

or the management of land; (2) those fitting themselves to be agricultural teachers or investigators.

Excellent opportunities are offered for graduate students who desire to take up research work. Training in natural and physical sciences is necessary for students taking graduate work. Lines of research work are open to students of this class upon consultation with the head of the department. Graduate courses will also be found under Experimental Agronomy.

## COURSES

### FOR UNDERGRADUATES AND GRADUATES

2*a*. **Cereal Crops**—Classification and methods of improvement of cereal crops, their adaptability and distribution, time and methods of seeding, harvesting and cultivating. To be taken in connection with course 2*b*. Two hours attendance. Two hours credit. Second semester. PROFESSOR PUGSLEY

2*b*. **Grading and Judging Grains**—Laboratory practice in describing, scoring, judging and inspecting cereals by outlines and score cards. Methods of breeding to improve these cereals. To be taken in connection with course 2*a*. Four hours laboratory. Two hours credit. Second semester.
PROFESSOR PUGSLEY AND ASSISTANTS

3. **Farm Management**—Dealing with farm problems such as farm location, equipment, labor, marketing, accounting. Should be preceded by courses 2*a*, 4 (or what was formerly Field Crops, and Soils 1 and 2), 7 and 9. Two hours attendance. Two hours credit. First semester. PROFESSOR PUGSLEY

4. **Forage Crops**—Classification and method of improvement of forage crops, their adaptability and distribution, methods of seeding and harvesting, treatment of pastures. Must be preceded by course 2*a*. Two hours attendance. Two hours credit. Second semester. PROFESSOR PUGSLEY

5. **Advanced Field Crops**—Study of methods of crop treatment, commercial grading of grains and hays—lectures, laboratories and readings. Prerequisite: courses 2*a*, 2*b*, 4, 7 and 9. Two to ten hours. One to five hours credit. First semester.
PROFESSOR PUGSLEY

6. **Advanced Field Crops**—5 continued. Second semester.

7. **Soils**—Origin, nature and properties of soils, their relation to plant growth and crop production. Should accompany course 9. First semester. Two hours attendance. Two hours credit.

ADJUNCT PROFESSOR BARKER

8. **Soils**—7 continued. Second semester.

9. **Soil Physics**—Physical properties, weight, pore space, specific gravity, soil moisture, soil temperature, effect of various forms of tillage on plant growth. Should accompany Course 7. Laboratory, four to eight hours attendance. Two to four hours credit. First semester.

ADJUNCT PROFESSOR BARKER AND ASSISTANTS

10. **Soil Physics**—9 continued. Mechanical analysis and elementary soil mapping. Second semester.

11. **Soil Management**—Principles governing the management of land, crop systems, tillage, rotations, manuring, fertilizing, drainage and aeration. Prerequisite: courses 2*a*, 4, 7 and 9. Two hours attendance. Two hours credit. First semester.

PROFESSOR PUGSLEY, ADJUNCT PROFESSOR BARKER

12. **Soil Management**—11 continued. Lectures, readings, laboratory. Two hours credit. Second semester.

13. **Soil Fertility**—Factors influencing the productive capacity of lands. Lectures, readings, and laboratory. Credit according to work. To be arranged with head of department and assistant. Prerequisite: courses 2*a*, 4, 7 and 9. First semester.

ADJUNCT PROFESSOR BARKER

14. **Soil Fertility**—13 continued. Second semester.

## EXPERIMENTAL AGRONOMY

PROFESSOR MONTGOMERY (PROFESSOR PUGSLEY), MR. HOPT

The courses offered in this department are intended primarily for those desiring to take up advanced work in Agronomy. Extensive lines of investigation are under way and opportunity is offered to work up some special line. All general courses in Farm Management are prerequisite. Students taking this work are expected to spend the summer season on the experimental farm, for which a moderate compensation is allowed. Only a limited number of students can be accommodated.

1. **Investigation**—Satisfactory work on some special line of investigation with assigned readings. Four to twenty hours laboratory. Thesis required. Two to five hours credit. First semester.

PROFESSOR MONTGOMERY

2. **Investigation**—Continuation of 1. Second semester.

3. **Methods of Investigation**—Compilation of experimental data. Correlation tables. Statistical methods. Four to twenty hours laboratory. Two to five hours credit.

PROFESSOR MONTGOMERY

4. **Methods of Investigation**—Continuation of 3. Second semester.

## SCHOOL OF AGRICULTURE

A. **Crop Production**—History, composition, improvement, production, and disposal of principal cereal and forage crops with special reference to Nebraska conditions. Three hours attendance. Three hours credit. First semester.

PROFESSOR PUGSLEY, MR. HOPT

B. **Crop Production**—A continued. Second semester.

C. **Plant Laboratory**—Instruction in types, varieties, and quality of cereals, judging by score cards. Identification of grass and legumes and weed seeds. Four hours laboratory. Two hours credit. First semester. MR. HOPT AND ASSISTANTS

D. **Plant Laboratory**—C continued. Second semester.

E. **Farm Management**—Practical farm problems, such as, location, laying out, equipment, system of rotation, and marketing. One hour attendance. One hour credit. First semester.

PROFESSOR PUGSLEY

F. **Farm Management**—E continued. Second semester.

G. **Soil Tillage and Management**—Order, deposition and natural transportation of soils, physical and chemical constitution of soils and subsoils, size of soil particles in relation to drainage, aeration, water storage and capillarity. Two hours attendance. Two hours credit. First semester.

PROFESSOR PUGSLEY, ADJUNCT PROFESSOR BARKER

H. **Soil Tillage and Management**—G continued. Second semester.

I. **Soil Laboratory**—Formation of soil from rock, study of texture and its influence on plant growth. Humus, soil moisture, move-

ment of air, specific gravity and volume weight. Four hours laboratory. Two hours credit. First semester.

ADJUNCT PROFESSOR BARKER AND ASSISTANTS

J. **Soil Laboratory**—I continued. Second semester.

## ANIMAL HUSBANDRY

PROFESSOR SMITH, ADJUNCT PROFESSOR ASHBY, ADJUNCT PROFESSOR RAIL, INSTRUCTOR ————

**PRIMARILY FOR UNDERGRADUATES**

1. **Breeds of Live Stock**—History of different breeds of live stock. Methods in development of breeds. Characteristics and adaptability of improved breeds. Must be accompanied by course 3. Two hours attendance. Two hours credit. First semester.

ADJUNCT PROFESSOR ASHBY

2. **Principles of Animal Breeding**—Theory and practice of animal breeding, variation, correlation, heredity, prepotency and selection. Grading, crossing, line breeding, and inbreeding, pedigrees. Two hours attendance. Two hours credit. Second semester.

ADJUNCT PROFESSOR RAIL

3. **Judging Live Stock**—Practice with the score card. Competitive judging of classes by ages of horses, cattle, sheep, and swine. Must be accompanied by course 1. Two hours credit. Four hours attendance. ADJUNCT PROFESSOR ASHBY

4. **Judging Live Stock**—Continuation of course 3, which must precede it. One hour attendance. One hour credit. Second semester.

PROFESSOR SMITH

5. **Animal Nutrition**—General composition of animal body. Composition and digestibility of foods. Digestion, absorption, and excretion. Feeding standards. Methods of feeding all classes of farm animals. Influence of food on animal form and on quality of meat, milk, and animal products. Two hours attendance. Two hours credit. Second semester. PROFESSOR SMITH

6. **Animal Nutrition**—5 continued. Advanced course. Review of recent bulletins on feeding. Methods employed in conducting experiments in feeding. Two hours attendance. Two hours credit. First semester. PROFESSOR SMITH

7. **Judging Live Stock**—Advanced course. Prerequisite: courses 3 and 4. Two hours attendance. One hour credit. First semester. PROFESSOR SMITH

8. **Judging Live Stock**—Continuation of 7 and must be preceded by it. Two hours attendance. One hour credit. Second semester. PROFESSOR SMITH

9. **Judging Live Stock**—Continuation of 8. Two hours attendance. One hour credit. First semester. PROFESSOR SMITH

10. **Animal Nutrition**—Seminar. Must be preceded by 5 and 6. Two hours attendance. One hour credit. Second semester. PROFESSOR SMITH

## SCHOOL OF AGRICULTURE COURSES

A. **Breeds and Live Stock Judging**—History and development of horses, breeds of cattle, sheep, and swine. Judging breeds by the score card and by competitive methods. Selecting animals for feeding purposes, judging meat carcasses. Three hours attendance. Three hours credit. First and second semesters. PROFESSOR SMITH, ADJUNCT PROFESSOR ASHBY, ADJUNCT PROFESSOR RAIL, INSTRUCTOR ———

B. **Principles of Breeding**—Elementary study of heredity, variation, and selection; prepotency; effect of pure-bred animals in improving common types. Three hours attendance. Three hours credit. First and second semesters. ADJUNCT PROFESSOR RAIL

C. **Feeding Live Stock**—Elementary discussion of composition of animal body and of foods. Influence of food on animal form. Economical feeding of farm animals. Five hours attendance. Five hours credit. Second semester. PROFESSOR SMITH, ADJUNCT PROFESSOR ASHBY

D. **Judging Live Stock**—Advanced course for third year students. Prerequisite: course 8. One hour attendance. One hour credit. First semester. PROFESSOR SMITH, ADJUNCT PROFESSOR RAIL

E. **Judging Live Stock**—D continued. Second semester.

## ANIMAL PATHOLOGY

HEAD PROFESSOR PETERS, ASSOCIATE PROFESSOR GAIN

2. **Diseases of Farm Animals**—Causes and prevention of animal diseases. Emergency treatment and minor surgery. Two hours attendance. Two hours credit. Second semester.

ASSOCIATE PROFESSOR GAIN

## SCHOOL OF AGRICULTURE COURSES

A. **Anatomy and Physiology**—Study of skeletons of horse and cow. Anatomy of digestive system and physiology of digestion. Circulatory system and study of blood. Three hours attendance. Three hours credit. First semester.

ASSOCIATE PROFESSOR GAIN

B. **Anatomy and Physiology**—Respiration. The nervous system. The senses. The foot. Generation and development. Three hours attendance. Three hours credit. Second semester.

ASSOCIATE PROFESSOR GAIN

C. **Diseases of Farm Animals**—Hereditary diseases. Diseases of respiratory system. Prevention of digestive diseases. Minor emergency surgery. Prerequisite: Anatomy and Physiology 1 and 2. Three hours attendance. Three hours credit. First semester.

HEAD PROFESSOR PETERS, ASSOCIATE PROFESSOR GAIN

D. **Diseases of Farm Animals**—Contagious diseases. Hygiene and Farm Sanitation. Three hours attendance. Three hours credit. Second semester.

HEAD PROFESSOR PETERS, ASSOCIATE PROFESSOR GAIN

(Offered in the course for women in the School of Agriculture.)

E. **Elements of Physiology**—Bones of Skeleton. Digestion. The circulatory system. Respiration. The senses. Drugs and stimulants. Two hours attendance. Two hours credit. First semester.

F. **Hygiene and Sanitation**—Personal hygiene. Domestic hygiene. Ventilation and water supply. Public hygiene. Two hours attendance. Two hours credit. Second semester.

## DAIRY HUSBANDRY

HEAD PROFESSOR HAECKER

2. **General Survey of Home Dairying**—Composition of milk and dairy products. Production, handling, testing, and uses of milk. The creaming of milk by centrifugal separators. Ripening, testing, and churning of cream. Making, scoring, and marketing butter; cheese making. Dairy Stock breeding, feeding and judging. Two hours attendance. Three hours laboratory. Four hours credit. Second semester. HEAD PROFESSOR HAECKER

3. **Dairy Stock Judging**—A special course in dairy stock judging. Work given with the four dairy breeds—Ayrshires, Guernseys, Holsteins, and Jerseys. Two hours attendance. One hour credit. First semester. HEAD PROFESSOR HAECKER

4. **Economic Dairying**—Advanced study in dairy husbandry. Prerequisite: course 2. Text-book, with readings in station bulletins and publications and judging dairy stock by score card. Two hours attendance. Two hours credit. Second semester. HEAD PROFESSOR HAECKER

6. **Dairy Husbandry**—Prerequisite: courses 2 and 4. Advanced studies in experiment station findings. A reading course with one lecture a week. Three hours credit. Second semester. HEAD PROFESSOR HAECKER

### SCHOOL OF AGRICULTURE COURSES

A. **General Study of Home Dairying**—Secretion, composition and production of milk. Practice with the various centrifugal hand-separators. Butter making, milk and cream testing. Two hours attendance. Four hours laboratory. Two hours credit. First term. HEAD PROFESSOR HAECKER

B. **General Study of Home Dairying**—A continued. Practice with the lactometer. Cheese making. Care and judging of dairy stock. Milk and its products. Two hours attendance. Four hours laboratory. Two hours credit. Second term. HEAD PROFESSOR HAECKER

## ENTOMOLOGY

HEAD PROFESSOR BRUNER, ADJUNCT PROFESSOR SWENK

Courses 1 and 2, or their equivalents, must precede all other courses in entomology except 3 and the school of agriculture courses.

Courses 5, 7, 12 and 13 may be taken in the second semester as well as the first.

## GRADUATE WORK

A candidate for the degree of Master of Arts in entomology must have had Zoology 1 and 2, or their equivalents, in addition to Entomology 1 and 2. He should be able to read Latin and either French or German, or both.

## MASTER OF ARTS

As his major for the degree of Master of Arts the student may choose either courses 5 and 6 or 7 and 8. He may elect his first and second minors from the other courses offered in this department or from the courses offered as graduate studies in the department of zoology.

The work in this department is of so technical a nature that each student should consult with the head of the department before registering for graduate work.

## COURSES

### FOR UNDERGRADUATES

1. **General Entomology**—Structure, development and transformations of insects. Two hours attendance. Four hours laboratory. Two hours credit. First semester. HEAD PROFESSOR BRUNER

2. **General Entomology**—1 continued. In addition, the collection and classification of insects. Six hours laboratory and field work. Two hours credit. Second semester.

3. **Economic Entomology**—Life-histories and habits of insect pests, with remedies. Two hours attendance. Four hours laboratory and field work. Two hours credit. First and second semesters. HEAD PROFESSOR BRUNER

11. **Forest Entomology**—Insects of the forest. One hour attendance. Five hours laboratory and field work. First semester. HEAD PROFESSOR BRUNER

### FOR UNDERGRADUATES AND GRADUATES

5. **Systematic Entomology**—Field and laboratory work, with special groups. One or more hours credit. First semester. HEAD PROFESSOR BRUNER

6. **Systematic Entomology**—5 continued. Second semester.

7. **Advanced Economic Entomology**—A study of all the insects affecting any host plant or group of plants, or other special topic. Laboratory and field work. One or more hours credit. First semester. HEAD PROFESSOR BRUNER

8. **Advanced Economic Entomology**—7 continued. Second semester.

12. **Special Training Course**—Intended to prepare students as government or experiment station investigators in entomology. Admission by consent of instructor. Two hours lecture. Ten or more hours laboratory and field work. Four or more hours credit. First and second semesters. HEAD PROFESSOR BRUNER

13. **Medical Entomology**—A study of insects in their relation to certain human diseases. One hour attendance. Three hours laboratory. One hour credit. First semester.
HEAD PROFESSOR BRUNER

### SCHOOL OF AGRICULTURE

A. **Agricultural Entomology**—Insects in their relation to agriculture. *For men.* Two hours lecture. First semester.
ADJUNCT PROFESSOR SWENK

A1. **Agricultural Entomology**—Course A continued, taking up the principal insect pests of our crops. Second semester.

B. **Domestic Entomology**—Insects in their relation to the household. *For women.* Two hours lecture. First semester.
ADJUNCT PROFESSOR SWENK

B1. **Domestic Entomology**—Course B continued. Second semester.

C. **Farm Entomology**—An abridgement of courses A and A1 for students in the winter course. Sixteen lectures.
ADJUNCT PROFESSOR SWENK

## FARM MECHANICS

PROFESSOR CHASE, MR. SHEDD, MR. BAER, MR. SJOGREN

The following courses are primarily for undergraduates in engineering and the general and technical agricultural groups:

1. **Farm Machinery**—A part of former course 3. All lines of agricultural implements, tillage, grading, seeding, harvesting, threshing, pumping and fertilizing machinery. The uses of concrete, field work with implements and the traction dynamometer. Pre-

requisite: Physics 1 and 2; mathematics 1. One hour attendance, six hours laboratory, three hours credit. First semester. Laboratory fee, $3.00. PROFESSOR CHASE, MR. SHEDD

2. **Farm Motors**—A part of former course 3. All classes of Farm Motors, the horse, windmill, steam boilers, steam engines, traction engines, gasoline engines, electric motors, and water motors, the measurement of power, economy tests, etc. One hour attendance, six hours laboratory. Three hours credit. Second semester. Laboratory fee, $4.00. PROFESSOR CHASE, MR. SHEDD

3. **Rural Architecture**—The laying out of farms, the study of houses, barns, granaries, sheds, fences, equipment, water systems, sewage, etc. One hour attendance. Six hours laboratory. Three hours credit. Laboratory fee, $1.00. First semester.
PROFESSOR CHASE

4. **Farm Drainage and Rural Highways**—A study of methods of drainage, estimates, laying out drainage systems, etc. A study of the highways of Nebraska, construction and reconstruction, haulage, and highway laws. The first half of the time of this course is given to drainage, and the second half to highways. One hour attendance, six hours laboratory, three hours credit. Laboratory fee, $2.00. PROFESSOR CHASE, MR. SHEDD

## SCHOOL OF AGRICULTURE

A. **Wood Work**—Practice with the care, use and adjustment of tools. Exercises in Bench work. Four hours attendance. Two hours credit. First term. Laboratory fee, $2.00. MR. BAER

B. **Wood Work**—Farm Building Construction. Prerequisite: course A. Four hours attendance. Two hours credit. Second term.
MR. BAER

C. **Forge Work**—Practice in forging, welding, tempering, pipe fitting, babbiting, and repairing of machinery. Four hours attendance. Two hours credit. First term. Laboratory fee, $2.00.
MR. SJOGREN

D. **Forge Work**—Continuation of course C. Prerequisite: course C. Four hours attendance. Two hours credit. Second term.
MR. SJOGREN

E. **Farm Machinery**—A study of all lines of Agricultural implements, tillage, grading, seeding, harvesting, pumping, and fertilizing

machinery. One hour attendance, two hours credit. Three hours laboratory. PROFESSOR CHASE, MR. SHEDD

F. **Farm Motors**—Continuation of course E with the addition of work with windmills, steam boilers, steam engines, gasoline engines, and traction engines. The determination of brake horse power and other tests of Farm Motors. One hour attendance. Three hours laboratory. Two hours credit.

PROFESSOR CHASE, MR. SHEDD

G. **Rural Architecture**—The laying out of Farms, the study of houses, barns, granaries, sheds, fences, equipment, water systems, sewage, heating, etc. Practice at drawing and designing. One hour attendance, two hours designing. Two hours credit.

PROFESSOR CHASE

H. **Rural Architecture**—Continuation of course G. One hour attendance. Two hours designing. Two hours credit.

PROFESSOR CHASE

## FORESTRY

PROFESSOR PHILLIPS

Course 1 is open to all students. Students wishing to elect other courses should first confer with the head of the department.

Through the courtesy of the United States Forest Service, the University is able to announce several special lectures on Silvice and National Forest problems. The lecturer for 1907-1908 was Mr. Raphael Zon, chief of the office of Silvics, Forest Service, U. S. Department of Agriculture. Course 8*a* is given by Mr. F. B. Moody, Assistant State Forester of Wisconsin. Courses 4*a* and 4*b* are given by Mr. Wm. H. Mast, Deputy Forest Supervisor in charge of the government nurseries at Halsey, Nebraska.

All of the courses are designed for undergraduate students, but 3, 4, 5, 6. Courses 7 and 8 may be taken as minors by graduates who are candidates for advanced degrees in other departments.

1. **General Forestry**—Importance of forests and forestry in the life of the nation; relation of forestry to agriculture and other industries; uses of wood. Two hours attendance. Two hours credit. First semester. PROFESSOR PHILLIPS

3. **Silviculture**—Objects of silviculture; forest soils and their relation to tree growth; forest influences on soil, climate, and stream flow; forest types; tolerance of trees; pure and mixed forests. Three hours attendance. Four to six hours field and library work. Three hours credit. First semester. PROFESSOR PHILLIPS

4. **Silviculture**—Continued. Methods of reproducing forests; treatment of forests; forest nurseries, planting, thinning, harvesting; forest injuries and methods of prevention. Includes 4*a* and 4*b*. Second semester. PROFESSOR PHILLIPS

4*a*. **National Forest Planting**—Methods of seed collecting, seed storage, nursery practice and field planting. Six to eight lectures. Second semester. MR. MAST

4*b*. **Commercial Nursery Practice**—Methods employed in various portions of the United States and relation to private planting. Six to eight lectures. Second semester. MR. MAST

5. **Forest Measurements**—Methods of determining contents of felled and standing trees, estimating timber, determination of height, diameter and increment. Two hours attendance. Four to six hours field and library work. Two hours credit. First semester. PROFESSOR PHILLIPS

6. **Forest Measurements and Management**—5 continued, first half of semester. Second half preparation of working plans, forest valuation, forest finance, etc. Two hours attendance. Four to six hours field and library work. Two hours credit. Second semester. PROFESSOR PHILLIPS

7. **Forest Utilization**—Uses of timber; methods of logging and milling; cost of lumbering in various forest regions; seasoning, grading, markets, final product; secondary forest products; minor forest products. Two hours attendance. Two hours credit. First semester. PROFESSOR PHILLIPS

8. **Forest Policy**—Forestry methods in foreign countries and the United States. State and National activity, as to public and private holdings; taxation, benefits, fire laws, working forces, achievements. Two hours attendance. Two hours credit. Includes 8*a*. Second semester. PROFESSOR PHILLIPS

8*a*. **State Forestry**—Special state problems; management of state reserves; marking timber, trespass, timber sales. Ten to fifteen lectures. Second semester. MR. MOODY

9. **Forestry Seminar**—Special phases of forestry with detailed reports by students. Current literature in forestry, forest botany and lumbering. Primarily for students who expect to take up state or government work. Two hours attendance. Two hours library work. No credit. Last half of first semester and first half of second semester. PROFESSOR PHILLIPS

10. **Teachers' Course**—Primarily for teachers of nature study in public schools; identification and classification of trees; properties and uses of the economic woods; geographical distribution of forests. One hour attendance with field and laboratory work. One hour credit. First semester. PROFESSOR PHILLIPS

11. **Silviculture**—Primarily for students of agriculture. A general view of forestry; methods of collecting and storing forest tree seed; forest planting and woodlot management. Two hours attendance with field work. Two hours credit. Second semester. PROFESSOR PHILLIPS

**Study of Woods** (See Botany 34)—Structure, growth-rings, heart wood, sap wood, soft woods, hard woods, porosity, grain, knots, density, durability. Two hours lecture. Two to four hours laboratory. Two hours credit. Second semester. PROFESSOR BESSEY

**Dendrology** (See Botany 36)—Review of the morphology and physiology of the tree. Forest regions, forest types, and forest trees of North America. Biological relations. Distribution. Economic importance. Especially for forestry students. Three hours attendance. Six hours in the laboratory, field, and herbarium. Three hours credit. Second semester. MR. POOL

**Forest Entomology** (See Entomology 11)—Insects of the forest. Lectures and laboratory. Two hours credit. First semester. PROFESSOR BRUNER

**Timber Physics** (See Applied Mechanics 19)—The physical properties of timber. This course is intended for students of forestry. One hour attendance. Three hours laboratory. Two hours credit. First semester. PROFESSOR CHATBURN

## SCHOOL OF AGRICULTURE

A. **Farm Forestry**—The individual tree; wind-breaks, shelter-belts, and

forest plantations; selection of species for planting. One hour attendance with field work. One hour credit. Second term

PROFESSOR PHILLIPS

B. **Farm Forestry**—An adaptation of course 12 for students in the short course of the School of Agriculture. Sixteen lectures.

PROFESSOR PHILLIPS

## GEOGRAPHY AND AGRICULTURAL GEOLOGY

PROFESSOR CONDRA, ASSISTANT PROFESSOR LOVELAND, ADJUNCT PROFESSOR BENGTSON

1. **Physical Geography**—An introductory lecture and laboratory course upon general physiography. Some of the topics discussed are: The origin and structure of the earth; relief features; the use of topographic maps; the work of rivers and valleys; plains and plateaus; mountains; volcanoes and earthquakes; snow fields and glaciers. An attempt is made to describe the leading physiographic process, to account for the land and water forms, and to show their relation to agriculture and forestry. Some time is given to climate and its effects. The lectures are fully illustrated by lantern, maps, models and specimens. Two hours attendance. Four hours laboratory and library. Two hours credit. First semester.

PROFESSOR CONDRA, ADJUNCT PROFESSOR BENGTSON

2. **Geography of North America**—A summary study of the political divisions, relief, coast lines, climate, structure of the continent, and a fuller treatment of each of the 17 topographic and soil regions; the structure, physiographic history, topography, soils, drainage, resources and industries of each region. Attention is given to the literature of the subject. The course is suited to all students who wish a knowledge of the geography of our country. The Great Plains Region is emphasized. Lectures are illustrated. Two hours attendance. Four hours library and laboratory. Two hours credit. Second semester.

PROFESSOR CONDRA, ADJUNCT PROFESSOR BENGTSON

4. **The Atmosphere**—A study of the meteorology and geography of the atmosphere. The course is designed to meet the practical needs of students. Some of the topics considered are: The physical

and chemical nature of the atmosphere; distribution of heat and atmospheric pressure; wind systems; humidity and rainfall; storms; hot winds; changes and fluctuations of climate; climatology in its relation to deserts, prairie land, forests, agriculture, and the distribution of people. Students are taught the construction of weather maps and climatic charts; forecasting; and the use and care of meteorological instruments. Experiments of various kinds are performed in the wet laboratory. Two hours attendance. Four hours laboratory. Two hours credit. Second semester.

ASSISTANT PROFESSOR LOVELAND, ADJUNCT PROFESSOR BENGTSON

5. **Industrial Geography**—This course gives a general survey of the National resources and their conservation and a more specific study of certain commercial raw materials as shown by museum specimens; it teaches the forms, processes and commercial relations of certain mineral and agricultural industries, as coal, petroleum, building stone, clay, sand, iron, cotton, rice, sugar, coffee and tea, beets, wheat, and corn. The subject is made concrete by the use of specimens and well selected sets of lantern slides. Two hours attendance. Four hours museum and library. Credit two hours. First semester.

PROFESSOR CONDRA, ADJUNCT PROFESSOR BENGTSON

21. **Field Geology**—This course consists of excursions to outcropping formations, quarries, gravel pits and sand dredges along Salt Creek, Blue River and the Platte. It teaches methods of doing field work and how to use the aneroid barometer, level, transit, plane table, camera and drawing materials as employed on geological and soil surveys. Mapping and descriptions. Collateral readings. One or two hours. First and second semesters.

ADJUNCT PROFESSOR BENGTSON

22. **Field Geology**—21 continued. First and second semesters.

PROFESSOR CONDRA

28. **Agricultural Geology**—A study of soil forming, road and cement-making minerals and rocks; the leading geologic structures;. rock weathering and erosion; ground water; rural water supplies; drainage and topographic conditions of agricultural relation; evolution of farm animals as shown by fossils; the structure and

soil regions of Nebraska; the agricultural importance of the "Red bed," Pierre, Bad land, Loup Fork, glacial, loess, alluvial and dune sand formations. Two hours attendance. Four hours laboratory and library. Two hours credit. Second semester.

PROFESSOR CONDRA

## HORTICULTURE

HEAD PROFESSOR EMERSON, ADJUNCT PROFESSOR WESTGATE, AND ADJUNCT PROFESSOR HOWARD

### GENERAL INFORMATION

The lecture room in Horticultural Hall is provided with charts, lantern slides, models and specimens illustrating various phases of horticulture. The laboratory accommodates twenty students and greenhouse room is available for forty students where the plants used in experimental work can be kept growing. A small nursery in the horticultural grounds furnishes much of the material used in the laboratory and at the same time illustrates practical methods of propagating various plants. The orchards, vineyards and small fruit gardens of the Experiment Station afford practice work in pruning and training fruits and present the opportunity for comparison of various cultural methods. The farm campus and newly established arboretum furnish very good material for the study of landscape gardening. A limited number of advanced students who desire to fit themselves as teachers or investigators will be employed at a moderate compensation to assist in the laboratory of the School of Agriculture during the winter or to help in the experimental work of the Experiment Station during the summer. The investigations now being conducted by the department on the subject of heredity afford especially favorable opportunities to advanced students of plant breeding.

Courses 1 and 2 should precede all other courses except for students who have completed the horticultural work offered in the School of Agriculture. Botany 1 and 2 should precede all courses in horticulture and must precede courses 7 and 8. All courses are open to women as well as to men, but courses 5 and 6 are especially recommended to women.

1. **General Horticulture**—General principles and practice of horticulture. Operations in the production of horticultural crops; prin-

ciples upon which these operations are based. Propagation of plants, sites and soils, arrangement of grounds, manures and fertilizers, tillage, cover-crops, pruning and training, winter protection, treatment of insect pests and diseases. Two hours attendance. Four hours laboratory. Three hours credit. First semester. HEAD PROFESSOR EMERSON

2. **General Horticulture**—1 continued. Second semester.

3. **Pomology**—Fruits; description, classification and culture. Fruits adapted to Nebraska considered in all aspects of their culture and handling. Two hours attendance. Two hours laboratory. Two hours credit. First semester.
ADJUNCT PROFESSOR HOWARD

4. **Vegetable Gardening**—Kitchen-garden vegetables; description, classification and culture. More important representatives of each class studied in detail. Two hours attendance. Two hours credit. second semester. HEAD PROFESSOR EMERSON

5. **Culture of Flowers**—The production of flowers both indoors and outdoors, for home use and for market, with particular attention to the construction of greenhouses and the production of cut flowers. Two hours attendance. Two hours laboratory. Two hours credit. First semester. ADJUNCT PROFESSOR WESTGATE

6. **Ornamental Gardening**—The principles of landscape gardening. Ornamental plants, shrubs and trees; their culture, classification and decorative value. Two hours attendance. Two hours laboratory. Two hours credit. Second semester.
ADJUNCT PROFESSOR WESTGATE

7. **Elementary Plant Breeding**—A preliminary study of the principles of plant improvement. Influence of environment, hybridization, isolation of types, selection of fluctuations. Detailed consideration of methods for improvement of horticultural crops. Two hours attendance. Two hours laboratory. Two hours credit. First semester. HEAD PROFESSOR EMERSON

8. **Advanced Plant Breeding**—Current theories of variation and heredity; their bearing upon plant breeding. Results of recent investigation. Laboratory work, library readings and consultation. Two to five hours credit. Second semester.
HEAD PROFESSOR EMERSON

## HOME ECONOMICS

PROFESSOR BOUTON, ASSOCIATE PROFESSOR PHILBRICK, MRS. HOSFORD, MISS DENNY, MISS HARPER, MISS POST

The instruction in this department relates to the practical problems of home life. Special attention is given to the artistic, economic and sociological questions which form a legitimate part of this work. Instruction is given by the lecture-laboratory method.

For the Teachers' Certificate the following courses are required for a major: 1, 2, 3, 4, 5, 6, 13, and 14.

1. **Sewing and Design**—Drafting, cutting and making of garments. Textiles, their manufacture, qualities and value. Home decoration, color, design, material, etc. Two hours attendance. Six hours laboratory. Three hours credit. First semester.
MISS DENNY AND ASSISTANT

2. **Sewing and Design**—1 continued. Second semester.

3. **Foods: Selection and Preparation**—Composition and function of typical foods; fundamental principles and processes of cooking and their application in the preparation of individual dishes; nutritive and money values. Should be preceded by Chemistry 1 and 2. Three hours attendance. Six hours laboratory. Three hours credit. First semester.
ASSOCIATE PROFESSOR PHILBRICK, MISS POST

4. **Foods: Selection and Preparation**—3 continued. Second semester.

5. **Advanced Cookery**—Application of scientific principles to more elaborate dishes and to menus. Preservation of foods; serving of meals. Three hours attendance. Six hours laboratory. Three hours credit. First semester.
ASSOCIATE PROFESSOR PHILBRICK, MISS POST

6. **Advanced Cookery**—5 continued. Second semester.

5*a*. **Dietetics**—To be taken with course 5. Consideration of problems of digestion and metabolism. Study of dietaries of given cost and their adaptation to varying conditions of health, age, environment, etc. Diet of children; family dietaries; diet of invalids. One hour attendance with assigned readings. One hour credit. First semester. ASSOCIATE PROFESSOR PHILBRICK

6*a*. **Dietetics**—5*a* continued. Institutional and special dietaries. Second semester.

[7. **Industrial Art**—Home decoration and advanced sewing; principles of design in dress and in house furnishing. Two hours attendance. Six hours laboratory. Three hours credit. First semester.
PROFESSOR BOUTON, MRS. HOSFORD]

8. **Industrial Art**—7 continued. Second semester.

9. **Household Economics**—House plans and furnishings; management of household affairs, division of income, domestic service, ventilation, heating, lighting, water supply and disposal of waste; house practice including all processes of practical housekeeping. Prerequisites: Home Economics 1, 2, 3 and 4, and Chemistry 1 and 2. Three hours attendance. Two hours laboratory. Three hours credit. First semester. MRS. HOSFORD

9*a*. Similar to 9 without laboratory. Two hours attendance.
MRS. HOSFORD

10. **Household Economics**—9 continued. Second semester.

10*a*. **Household Economics**—9*a* continued. Second semester.

11. **General Cookery**—For juniors and seniors who desire some work in cookery, but have not the time for Courses 3, 4, 5 and 6. General principles and methods of cooking; lessons in serving. Two hours attendance. Four hours laboratory. Two hours credit. First semester.
ASSOCIATE PROFESSOR PHILBRICK AND ASSISTANT

12. **General Cookery**—11 continued. Second semester.

13. **Teachers' Course**—Required of candidates for the University Teachers' Certificate in Home Economics. Lectures with practice work in teaching. Two hours attendance. Three hours credit. First semester. PROFESSOR BOUTON

14. **Teachers' Course**—13 continued. Second semester.

15. **Applied Design**—Principles of industrial art applied to home decoration. One hour attendance. Two hours laboratory. One hour credit. First semester. MISS DENNY

16. **Applied Design**—15 continued. Second semester.

17. **Camp Cookery**—For engineering students. Selection and preparation of food suited to camp life with some practice in out of

door cooking. Open to men and women. Three hours laboratory. One hour credit. PROFESSOR BOUTON AND ASSISTANT

18. **Camp Cookery**—17 continued. Second semester.

19. **Home Science Extension Work**—For teachers who wish to introduce home science into schools with or without equipment; also for persons desirous of preparing themselves to render useful social service in settlements, clubs, etc. Two hours attendance. Six hours laboratory. Three hours credit. First semester. PROFESSOR BOUTON, MISS HARPER

20. **Home Science Extension Work**—19 continued. Second semester.

21. **Assistants' Course**—For those assisting in courses 3, 4, 5, 6, 11 and 12. Fixing of fundamental principles in food preparation and nutrition. Nutritive and economic food values. Adaptation of menus to specific conditions. A brief survey of methods of instruction with practical work in conducting laboratory classes and quizzes. Prerequisite: courses 3, 4, 5 and 6. Class, library and laboratory work. Three hours credit. First semester. ASSOCIATE PROFESSOR PHILBRICK

22. **Assistants' Course**—21 continued. Second semester.

## MILITARY SCIENCE AND TACTICS

[SEE COLLEGE OF ARTS AND SCIENCES]

## PHYSICAL EDUCATION

[SEE COLLEGE OF ARTS AND SCIENCES]

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Series XV No. 6

# Bulletin of The University of Nebraska

## ANNUAL CATALOG

OF THE

# COLLEGE OF AGRICULTURE

## ANNOUNCEMENT 1910-1911

LIBRARY OF THE UNIVERSITY OF ILLINOIS

Published by the University March 15, 1910

LINCOLN, NEBRASKA

The Bulletin of the University of Nebraska is published semi-monthly between January 1 and October 1 of each year by the University of Nebraska. Entered at the Post-Office at Lincoln, Nebraska, as second-class matter under Act of Congress July 16, 1894.

## COLLEGES AND SCHOOLS OF THE UNIVERSITY

The University of Nebraska comprises the following colleges and schools:

The Graduate College
The College of Arts and Sciences
The Teachers College
The College of Engineering
The College of Agriculture and the School of Agriculture
The College of Law
The College of Medicine and the School of Pharmacy
The School of Fine Arts
The Affiliated School of Music

The United States Agricultural Station for Nebraska, the Experimental Substations at North Platte, Valentine and Scottsbluff and the Farmers' Institutes are under the supervision of the Board of Regents of the University. The Lincoln Dental College has a contract with the University under which the sciences necessary for the degree in dentistry are taught at and by the University.

For separate catalogs or information regarding any of the above colleges or schools, address

THE REGISTRAR,
THE UNIVERSITY OF NEBRASKA,
Lincoln, Nebraska.

## THE UNIVERSITY YEAR

The regular session of the University embraces thirty-nine weeks, beginning the third Tuesday of September and is divided into a first and a second semester. A summer session of eight weeks immediately follows the close of the second semester. Instruction is offered from September to August.

*First Semester, 1910-1911, September 20 to February 3
*Second Semester, 1910-1911, January 31 to June 15
Summer Session, June 17 to August 12, 1910

Registration in the summer session differs in fees and conditions from that in the regular semestral sessions. To enter any session, one must be able either to present the minimum admission requirements to the University or to meet the conditions for "Adult Special" registration.

* Final examinations for the first semester, entrance examinations and registration for the second semester are held during the same week.

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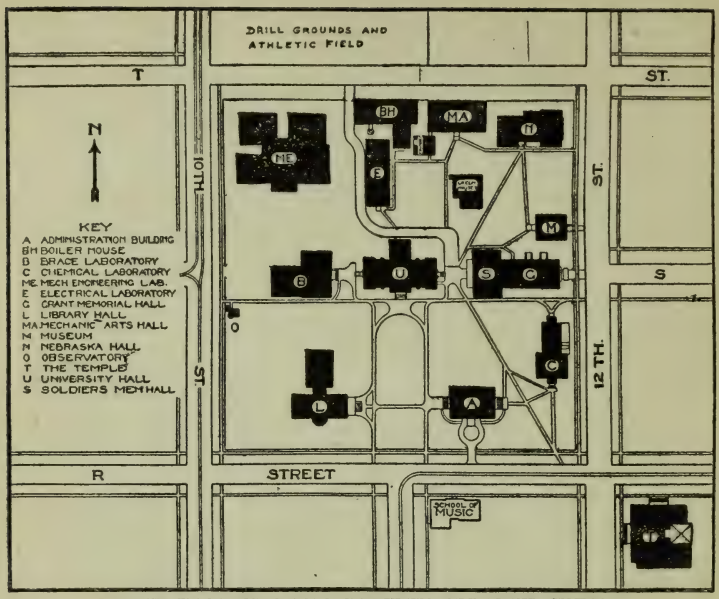
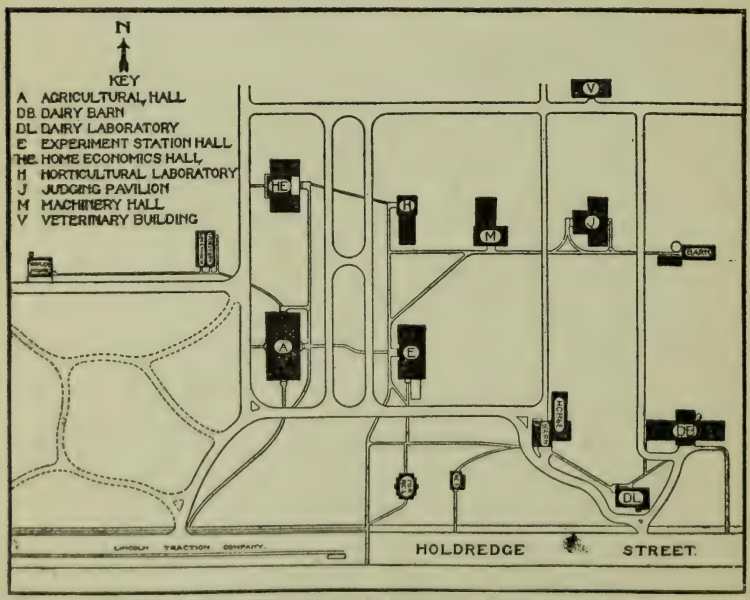



THE UNIVERSITY CAMPUS IN THE CITY




THE UNIVERSITY CAMPUS AT THE FARM

## CALENDAR FOR THE COLLEGE OF AGRICULTURE

### 1910

| | | |
|---|---|---|
| September 20 | Tuesday | First Semester begins. |
| September 20-24 | Tuesday-Saturday | Entrance examinations and registration. |
| September 24 | Saturday | Opening address by the Chancellor. |
| *October 31 | Monday | School of Agriculture, first term begins |
| November 23 | Wednesday, 12 m. | Thanksgiving recess begins. |
| November 26 | Saturday, 12 m. | Thanksgiving recess ends. |
| December 13 | Tuesday | Regular meeting of the Board of Regents. |
| December 21 | Wednesday, 6 p. m. | Christmas holidays begin. |

### 1911

| | | |
|---|---|---|
| January 3 | Tuesday, 8 a. m. | Christmas holidays end. |
| Jan. 30-Feb. 3 | Monday-Friday | First Semester examinations. |
| Jan. 31-Feb. 4 | Tuesday-Saturday | Entrance examinations and registration for the Second Semester. |
| February 6 | Monday | Second Semester classes begin. |
| | | School of Agriculture, second term begins. |
| February 15 | Wednesday | Charter Day. A holiday. Regular meeting of the Board of Regents. |
| April 11 | Tuesday | Regular meeting of the Board of Regents. |
| April 12 | Wednesday, 6 p. m. | Easter recess begins. |
| April 19 | Wednesday, 8 a. m. | Easter recess ends. |
| April 21 | Friday | School of Agriculture Commencement. |
| June 2-June 8 | Friday-Thursday | Second Semester examinations. |
| June 7-June 12 | Wednesday-Monday | Cadet Encampment. |
| June 12 | Monday, 4 p. m. | Final recommendations by faculties for degrees. |

### Commencement Week, 1911

| | | |
|---|---|---|
| June 11 | Sunday | Baccalaureate Sermon. |
| June 13 | Tuesday | Class Day. Regular meeting of the Board of Regents. |
| June 14 | Wednesday | Alumni Day. |
| June 15 | Thursday | Fortieth Annual Commencement. |
| September 19 | Tuesday | First Semester begins (1911-1912). |

* A separate catalog is published of the four-year course in the School of Agriculture.

## OFFICERS OF ADMINISTRATION AND INSTRUCTION

SAMUEL AVERY, A. M., Ph. D., Chancellor of the University.

JAMES STUART DALES, M. Ph., Secretary of the Board of Regents and Treasurer of the University.

PHILIP JOHN HARRISON, A. B., Registrar and University Publisher.

EDGAR ALBERT BURNETT, B. Sc., Dean of the College of Agriculture and Director of Experiment Stations. Agricultural Hall 203.

CHARLES EDWIN BESSEY, Ph. D., LL. D., Head Professor of Botany and Head Dean of the University.

LAWRENCE BRUNER, B. Sc., Head Professor of Entomology and Acting State Entomologist.

*ALBERT THEODORE PETERS, D. V. M., Head Professor of Animal Pathology.

ALBERT EUGENE DAVISSON, A. B., Head Professor of Agricultural Education.

HOWARD REMUS SMITH, B. Sc., Head Professor of Animal Husbandry. Agricultural Hall 103.

ARCHIBALD LOUIS HAECKER, B. Sc. A., Head Professor of Dairy Husbandry. Dairy Hall.

FREDERICK JAMES ALWAY, Ph. D., Head Professor of Agricultural Chemistry. Experiment Station Hall.

ROLLINS ADAMS EMERSON, A. M., Professor of Horticulture. Horticultural Hall.

ROSA BOUTON, A. M., Professor of Home Economics. Home Economics Hall.

FRANK J. PHILLIPS, M. S. F., Professor of Forestry. Nebraska Hall 105.

EDWIN MEAD WILCOX, Ph. D., Professor of Agricultural Botany. Agricultural Hall 307.

LEON WILSON CHASE, B. Sc in M. E., Professor of Agricultural Engineering. Machinery Hall.

EDWARD GERRARD MONTGOMERY, A. M., Professor of Experimental Agronomy. Experiment Station Hall.

* Resigned January 1, 1910.

CAPT. HALSEY E. YATES, 17th Inf., U. S. A., Commandant of Cadets and Professor of Military Science. Grant Memorial Hall.

WILLIAM PATTON SNYDER, A. B., M. S., Superintendent of North Platte Experimental Substation.

CHARLES WILLIAM PUGSLEY, B. Sc., Professor of Agronomy and Farm Management. Experiment Station Hall.

GEORGE EVERT CONDRA, Ph. D., Professor of Geography and Economic Geology. University Hall 7.

JAMES HARRISON GAIN, M. D. C., Professor of Animal Pathology. Veterinary Hall.

VAL KEYSER, B. Sc., Superintendent of Farmers' Institutes. Agricultural Hall 205.

*ANNETTE ELIZABETH PHILBRICK, B. Sc., Associate Professor of Home Economics.

HARRIET FOLGER, B. Sc., Associate Professor in Home Economics. Home Economics Hall.

JULIA EMMELINE LOUGHRIDGE, A. B., Assistant Principal of the School of Agriculture and Adjunct Professor of Mathematics. Agricultural Hall 204.

LAZELLE BRANTLEY STURDEVANT, A. M., M. D., Assistant Professor of Animal Pathology. Veterinary Hall.

MYRON HARMON SWENK, A. M., Assistant Professor of Entomology and Assistant State Entomologist. Experiment Station Hall.

ELLIS RAIL, B. Sc. A., Assistant Professor of Animal Husbandry. Agricultural Hall 104.

VERNON VILAS WESTGATE, A. M., Adjunct Professor of Horticulture. Horticultural Hall.

PERCY BONSFIELD BARKER, A. B., Adjunct Professor of Agronomy (Soils). Experiment Station Hall.

*ROBERT CHILDERS ASHBY, B. Sc., Adjunct Professor of Animal Husbandry.

ROBERT FRANCIS HOWARD, B. S. in Agr., Adjunct Professor of Horticulture. Horticultural Hall.

ROBERT SAMUEL TRUMBULL, A. M., Adjunct Professor of Agricultural Chemistry. Experiment Station Hall.

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* Resigned.

WILLIAM LUTHER FRENCH, B. Sc., Adjunct Professor of Dairy Husbandry. Dairy Hall.

G. HERBERT COONS, A. B., Adjunct Professor of Agricultural Botany. Agricultural Hall 307.

FLORA BULLOCK, A. M., Adjunct Professor in English. Agricultural Hall 109.

ERWIN HOPT, B. Sc., Adjunct Professor in Agronomy (Crops). Experiment Station Hall.

OLENUS LEE SPONSLER, A. B., Adjunct Professor in Botany and Forestry. Nebraska Hall 105.

CLAUDE KEDZIE SHEDD, B. Sc., Adjunct Professor of Agricultural Engineering. Machinery Hall.

ALVA ALDUS BAER, Instructor in Wood Work. Machinery Hall.

*MILDRED POST, A. B., Instructor in Home Economics.

†GRACE GOLDENA DENNY, A. B., Instructor in Home Economics.

ELLA BRADFORD HARPER, A. B., Instructor in Home Economics. Home Economics Hall.

ORPHA NESBITT, B. Sc., Instructor in Home Economics. Home Economics Hall.

OSCAR WARNER SJOGREN, Instructor in Forge Work.

GEORGE CROCKER, B. Sc., Instructor in the School of Agriculture. Agricultural Hall.

MABEL HEDGES, A. B., Assistant in Home Economics. Home Economics Hall.

GLAIDETH DENNY, A. B., Assistant in German and History. Agricul tural Hall 204.

EDNA CLARA NOBLE, B. L., Library Assistant. Agricultural Hall.

*MRS. JENNIE CHAMBERLAIN HOSFORD, A. B., House Supervisor. Home Economics Hall.

SAMUEL McKELVIE, Lecturer in Swine Judging. Agricultural Hall 103.

KARL AUGUST ULMAN, B. Sc., Instructor in Cheesemaking. Dairy Hall.

MRS. VADA CLEGG VENNUM, Assistant Registrar, School of Agriculture. Agricultural Hall 207.

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* Resigned.

† Leave of absence for one year.

**Standing Committees of the Faculty**

Course of Study—Professor Davisson (chairman), Professors Bouton, Bruner, Chase, Phillips, Pugsley, Smith, Wilcox, and Mrs. Vennum (secretary).

Farmers' Institutes—The Dean (chairman), Professors Haecker, Pugsley, Keyser (secretary).

Schedule of Classes—Professor Smith (chairman), Professors Chase, Pugsley, the Registrar.

## PURPOSE OF THE COLLEGE OF AGRICULTURE

The College of Agriculture was established by an act of the legislature of 1909, reorganizing the colleges within the University. The purpose of this college is (1) to provide thorough instruction in the technical agricultural sciences and (2) to aid in the promotion of agriculture through its secondary School of Agriculture, its Experiment Stations, and its Farmers' Institute work.

## GROUPS OF STUDY

The **Agricultural Group** meets the needs of those students who desire to make practical application of their education in the management of land or who wish to prepare themselves for the pursuit of scientific investigation along some line in agriculture, such as agricultural botany, agricultural chemistry, agronomy, animal husbandry, animal pathology, dairy husbandry, entomology, forestry, horticulture, and other technical subjects related thereto. This group should also appeal to those who desire to prepare themselves for teaching in high schools or in agricultural colleges and who desire special agricultural training to meet the demands of the schools requiring that instruction be given in agriculture. As a course in general education for students who expect to follow business pursuits or to continue still further the study of some technical agricultural subject, this course is offered as a suitable foundation. To those who desire an education which will put them in touch with the leading industrial activities of the state, and fit them to be leaders on the farm, the Agricultural course will also prove most efficient.

**Forestry Group.** This group is designed to guide the student in the selection of courses and is aimed to prepare men for either general or technical work in forestry. The sequence of the general or technical work in forestry. The sequence of the courses during the first three years is arranged to give a basis for a broad education and at the same time to give a good scientific foundation leading to the more technical courses in forestry. While the group is intended primarily for foresters, many of the courses may be taken by students in general collegiate work or by students specializing in other lines, who desire a knowledge of some particular line of forestry.

The **Home Economics Group** leads to the degree of Bachelor of Science. Besides those subjects which have to do especially with the home, it includes studies in science, language, history, and other branches affording a good general education while giving special efficiency in household arts and sciences.* This department is housed in Home Economics Hall, situated on the University Farm. The hall is a three-story brick building, equipped to provide practical instruction in cooking, sewing, and general house work.

## FACILITIES FOR INSTRUCTION

To illustrate properly the work in the various departments in agriculture, the college is provided with a farm of 320 acres which is used for experimental purposes and to illustrate methods in farm practice, showing the effect of rotations and methods of treatment on the physical and chemical properties of the soil and on its productiveness. The department of Horticulture maintains an extensive orchard and garden for demonstrating horticultural methods and practices. The departments of Animal Husbandry and Dairy Husbandry keep extensive herds for instruction in types of farm animals. The agricultural plant, aside from lands, consists of eight main buildings and several barns and accessory buildings to complete the work and efficiency of the plant. Agricultural Hall is used for administration, library, and laboratories in Agricultural Botany. Experiment Station Hall furnishes laboratories for Soils, Entomology, and Agricultural Chemistry. The Judging Pavilion furnishes stock judging laboratories and grain judging laboratories, with exceptional facilities for work. The Agricultural Engineering building furnishes laboratories in forge work, wood work, and farm machinery. Horticultural Hall is devoted to laboratories and class rooms for horticultural instruction. Dairy Hall furnishes laboratories for instruction in buttermaking and cheesemaking, supplemented by a herd of exceptional efficiency to demonstrate the best dairy practice. Home Economics Hall furnishes laboratories for instruction in cooking and in household art. All of the technical departments giving instruction have excellent laboratory facilities and depend upon the laboratory method to give definiteness and efficiency to their instruction.

## ADMISSION TO THE COLLEGE OF AGRICULTURE

**Entrance Credits.** For admission to the freshman class in the College of Agriculture the candidate must present 30 entrance credits or "credit

* For the University Teachers' Certificate in Home Economics, see department of Home Economics under "Courses of Instruction." Also, page 16.

points;''* that is, a total of 150 recitation hours. Conditional admission is permitted on a minimum of 24 points, or 120 recitation hours; but a student admitted conditionally must remove the conditions at the earliest possible opportunity, as a degree will not be granted until all such conditions are removed.

**Required Subjects (17 points).** Of the 30 points required for admission, 17 must be presented from the following subjects in the amount indicated; the time element is essential:

| | |
|---|---|
| Algebra (through Logarithms), 1½ years, 5 hours a week | 3 |
| Rhetoric and Literature, 2 years, 5 hours a week | 4 |
| Geometry (plane and solid), 1½ years, 5 hours a week | 3 |
| Language (French, German, Greek, Latin—not more than 2 of these subjects), 2 years, 5 hours a week | 4 |
| Natural Science (Botany or Zoology), ½ year, 5 hours a week | 1 |
| Physical Science (Chemistry or Physics), 1 year, 5 hours a week | 2 |

**Optional Subjects (13 points).** In addition to the above required subjects, for which no substitutes are accepted, candidates for admission must present 13 points from the following optional subjects:

| | |
|---|---|
| Agriculture, 5 hours a week | 1 |
| †Rhetoric and Literature, 1 year, 5 hours a week | 2 |
| History (general or American), 3 years, 5 hours a week | 1 to 6 |
| Language (ancient or modern), 3 years, 5 hours a week | 2 to 6 |
| Manual Training, 1 year, 5 hours a week | 1 or 2 |
| Mechanical Drawing, ½ year, 5 hours a week | 1 |
| Natural Science (Zoology or Botany), 1 year, 5 hours a week | 1 or 2 |
| Normal Training | 1 |
| Physical Science (Physics or Chemistry), 1 year, 5 hours a week | 1 or 2 |
| ‡Senior Reviews | 1 |
| Trigonometry (plane), ½ year, 5 hours a week | 1 |
| Astronomy, 1<br>Bookkeeping, 1<br>Civics, 1<br>Geology, 1<br>Physical Geography, 1<br>Physiology and Hygiene, 1<br>Political Economy, 1 — Not more than 4 accepted | 4 |

* An ''entrance credit'' or ''credit point'' means the work of a class holding five recitations a week, of 40 to 50 minutes each, for at least eighteen weeks. In laboratory courses, a ''credit point'' means three recitations and two double periods of laboratory work (under the supervision of an instructor) each week for at least eighteen weeks.

† Four optional points are allowed only to schools named by the Accredited Schools Committee.

‡ Credit granted only to Normal Training High Schools.

**Entrance Without Examination.** All students who have completed the course in the School of Agriculture are admitted to the College of Agriculture without examination.* Young women graduating in Home Economics from the School of Agriculture are admitted to the Home Economics group of the College of Agriculture. An applicant presenting a certificate from an accredited school, academy, or high school is admitted without examination to any classes for which he is fully prepared. Any candidate for admission bringing credentials from a high school, college, or university not included in the list of schools accredited to this University must, upon making application, present his credentials to the Registrar and be prepared to take such examinations as are prescribed. A student desiring to ascertain whether or not he can be admitted to the first year without examination should apply to the Registrar for blank credential slips. When these are properly filled out and returned, he will be informed at once whether his credentials are or are not acceptable.

**Adult Special Students.** Students not candidates for degrees may register in the College of Agriculture without conforming to the entrance requirements. The admission of adult special students is permitted after consultation with and upon the recommendation of the Dean. Such students must pay all necessary fees. Upon fulfilling the entrance requirements, adult special students may register as regular students, and become candidates for the degree.

**Registration.** Registration in the College of Agriculture takes place during the first five days of each semester, from 9 a. m. Tuesday to 5 p. m. Saturday. To promote prompt registration, a registration fee of $3.00 is charged a student who, without good reason, fails to register within the days set aside for this purpose.† A like fee is charged for the re-registration when made necessary by the student's fault; any change whatever in a registration once made is regarded as a re-registration. A student changing from one college to another must pay a new matriculation fee of $5.00, and no student is allowed to make such a change without written permission to the Registrar from the Dean of each college concerned.

* Beginning with September, 1911, one year of language will be required from graduates of the School of Agriculture for admission to the College of Agriculture.

† Properly prepared students who are unable to enter at the beginning of the year are admitted later; but all students who can possibly do so are urged to be present at the beginning of the year, as students entering later are at much disadvantage, and cannot expect to finish the course within the minimum limit except by taking work in the Summer Session.

No student is allowed to change his group or drop any study for which he has been regularly registered without written permission from the dean of the college. No regular student is permitted to register for less than twelve (12) hours nor more than eighteen (18) hours a semester without the Dean's permission. Students cannot attend classes for which they are not registered, and credit is not granted for studies pursued without registration. Any change in a student's residence must be immediately reported to the Registrar.

## FEES AND EXPENSES

**Fees.** All fees and charges are payable in advance to the Treasurer of the University. No part of the fees can be refunded to a student who leaves after the beginning of the fourth week of a semester or session. Any refunds should be called for at the time of withdrawal from a class or from the University. The schedule of fees in the College of Agriculture is as follows:

| | |
|---|---|
| Matriculation (paid only on first registration) | $5 00 |
| Being a statutory fee, this cannot be refunded except when collected through error. | |
| Non-resident (charged to each person not a resident of the state), each semester | 15 00 |
| Incidental, each semester | 3 00 |
| Library (charged to each student who does not pay a laboratory fee), each semester | 1 00 |
| Special registration (for late registration or re-registration) | 3 00 |
| Special examination, each course | 1 00 |
| Diploma, first degree | 5 00 |
| Diploma, advanced degree | 10 00 |
| Additional Diploma fee if degree taken *in absentia* | 10 00 |
| Certificate | 1 00 |

### LABORATORY FEES

Agricultural Chemistry—Course 1, $3; 2, $4; 3, $1; 4, $2.
Agricultural Engineering—Course 1, $3; 2, $4; 3, $1; 4, $2.
Botany—Courses 1, 2, 21, 22, 25, 35, 36, 37, $2; 13, 14, $1; 6, 19, 20, $3.
Chemistry—Courses 1, 2, 3, 4, $5.
Civil Engineering—Courses 5, 30, $3.
Entomology—Courses 1, 2, $2.
Geography—Courses 1, 2, $1.
Geology—Course 1, $1.
Home Economics—Courses 1, 2, 7, 8, 11, 12, 15, 16, $2; courses 3, 4, $3; courses 5, 6, $5.
Physics—Courses 1*a*, 2*a*, $1.
Physiology—Courses 1, 2, $5.

**Expenses.** In Lincoln, board and lodging may be secured in private families for from $3.50 to $5 a week. There are also numerous student clubs. The Young Men's Christian Association and the Young Women's Christian Association of the University keep lists of boarding places. The Young Men's Christian Association of the University also maintains under the direction of the Registrar an employment bureau, the services of which are free to all students. In a city the size of Lincoln there are many opportunities for students to defray at least a part of their expenses. The University does not, however, guarantee employment.

## REQUIREMENTS FOR GRADUATION

**University Credits.** For the degree of Bachelor of Science, 125 University "credit hours" are required.* No student is recommended for a degree who is not within 18 hours of this requirement at the beginning of his last semester. All graduates of the School of Agriculture are admitted to the College of Agriculture without examination. No such graduate shall be permitted to take a degree from the College of Agriculture who does not have at least the equivalent of four credit points in Language, two points of which may be accepted as entrance credit.

**Required Subjects.** Each candidate for the degree of Bachelor of Science in the College of Agriculture must complete the following subjects:

| | Hours |
|---|---|
| Modern Language (French or German | 10 |
| Biology (Botany, Entomology or Zoology) | 10 |
| Physical Science (Chemistry or Physics) | 8 |
| Biological, Physical, or exact Science | 10 |
| English (Rhetoric 1, 2 and 6 hours of Rhetoric or English Literature) | 10 |
| History, Political Science, Philosophy or Sociology | 6 |
| Military Science for men or Physical Training for women | 4 |
| Total, | 58 |

**Science Requirement.** No student will be granted a degree from the College of Agriculture who has completed less than 60 hours of science, which may include Agriculture or Home Economics. Students selecting the Agricultural group will be required to complete 40 hours of agricultural subjects, to be taken in not less than three departments. Students selecting the Forestry group will be required to complete 40 hours of Botany and Forestry. Students selecting the Home Economics group will be required to complete 30 hours of Home Economics.

* A course receives one "credit hour" for each one-hour recitation or lecture and two-hour preparation or laboratory period it demands for each of the eighteen weeks of a semester.

**Major Subjects.** Not later than the beginning of his second year each student in the College of Agriculture must select some one department of the college in which he will take a major of not less than 16 hours nor more than 35 hours.

**State Teachers' Certificate.** Graduates of the College of Agriculture having taken a major in agriculture or the Home Economics group (including Courses 13 and 14), and having taken in addition thereto eight hours in Professional Education and who have devoted a half-year to the observation and practice of teaching, shall receive the First Grade State Teachers' Certificate, which qualifies them as supervisors and teachers in their chosen subject in the public schools of Nebraska.

**Advisers.** At the time of his first registration each Freshman student in the College of Agriculture is assigned by the Dean to some member of the Faculty, who becomes his adviser during the Freshman year. When, at the beginning of his second year, a major subject is chosen, the head of the department in which the major work is taken becomes the adviser of the student until the time of his graduation. The dean of the college constitutes a head adviser for each student within the college. The adviser to women is a special adviser to all women students in the college.

**Absence or Withdrawal.** A leave of absence for a short time may be granted a student by the Dean. This leave is merely a justification for absence and not an excuse from any work. If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a semester, the Registrar grants him permission to do so. Students in good standing who are not minors are given honorable dismissal from the University at their own request; minors, at the request of their parents or guardians.

## ORDER OF COURSES IN THE GROUPS OF STUDY

### THE AGRICULTURAL GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| *Agricultural Subjects | 3 | 3 |
| Biology (Botany,† Entomology or Zoology‡) (A and S) | 3 | 3 |
| Chemistry 1, 2 (A and S)‡ | 2 | 2 |
| French or German (A and S)‡ | 5 | 5 |
| Rhetoric 1, 2 (A and S)‡ | 2 | 2 |
| Military Drill | 1 | 1 |
| | 16 | 16 |
| **SECOND YEAR** | | |
| *Agricultural Subjects | 3 | 3 |
| French or German (if two points Language have not been offered for entrance), or Natural, Physical or Exact Science | 5 | 5 |
| Rhetoric 5 and 6 or English Literature (A and S)‡ | 3 | 3 |
| Chemistry 3 or Physics 1*a* and 2*a* (A and S)‡ | 4 | |
| Biology (Botany, Entomology or Zoology) (A and S)‡ | | 4 |
| Military Drill | 1 | 1 |
| | 16 | 16 |
| **THIRD YEAR** | | |
| *Agricultural Subjects | 7 | 7 |
| Electives | 6 | 5 |
| History, Political Economy or Philosophy (A and S)‡ | 3 | 3 |
| | 16 | 15 |
| **FOURTH YEAR** | | |
| †Agricultural Subjects | 7 | 7 |
| Electives | 8 | 8 |
| | 15 | 15 |

* The "Agricultural Subjects" include Agricultural Botany, Agricultural Chemistry, Agricultural Engineering, Agricultural Geology, Agronomy, Animal Husbandry, Dairy Husbandry, Forestry, Geography, Horticulture, Economic Entomology, Agricultural Pedagogy.

† Graduates of the School of Agriculture shall take Botany 3 and 4; others shall take courses 1 and 2.

‡ Required courses not given in the College of Agriculture are marked with the initials of the college in which they are offered; *e. g.*, (A and S) indicates that the subject is offered in the College of Arts and Sciences.

## FORESTRY GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Botany 1, 2 | 3 | 3 |
| German 1, 2 (A and S)* | 5 | 5 |
| Geography 1, 2 | 2 | 2 |
| Chemistry 1, 2 (A and S)* | 2 | 2 |
| Rhetoric 1, 2 (A and S)* | 2 | 2 |
| Forestry 1, 2 | 2 | 2 |
| Military Drill | 1 | 1 |
| | 17 | 17 |
| SECOND YEAR | | |
| Botany 13, 14 | 2 | 2 |
| Rhetoric 5, 6 (A and S)* | 3 | 3 |
| Entomology 1, 2 | 3 | 3 |
| Physics 1*a*, 2*a* (A and S)* | 2 | 2 |
| Dendrology (Botany 35, 36) | 2 | 3 |
| Mathematics 1 (A and S)* | 5 | |
| †Lettering and Drawing (Applied Mech. 10) | | (2) |
| Military Drill | 1 | 1 |
| | 18 | 14 |
| THIRD YEAR | | |
| Botany 19, 20 | 3 | 3 |
| Surveying 5, 5*a*, 30 (E)* | 4 | 3 |
| Botany 6 (A and S)* | | 3 |
| Soils (Agronomy 7, 9) | 4 | |
| Forestry 7, 8 | 2 | 2 |
| Political Economy 7, 1 (A and S)* | 3 | 3 |
| Geography 4 | | 2 |
| | 16 | 16 |
| FOURTH YEAR | | |
| Botany 21, 22 (A and S)* | 3 | 3 |
| Study of Woods (Botany 37) (A and S)* | 3 | |
| Timber Physics (Applied Mech. 20) (E)* | | 3 |
| Forestry 11, 12 | 3 | 3 |
| Forestry 15, 16 | 3 | 3 |
| Geology 1 (A and S)* | 3 | |
| †Zoology 1 (A and S)* | (3) | |
| †Forest Zoology 32 (A and S)* | | (2) |
| †Electives | | (3) |
| | 15 | 12 |

* See third note at bottom of page 17.

† The subjects indicated by an asterisk (*) are elective, and on consultation with the head of the department may be selected towards the 125 hours of credit necessary for graduation.

| FIFTH YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Forestry 17 | 2 | |
| Forestry 19, 20 | 3 | 3 |
| Forest Mycology (Botany 25) | 2 | |
| Forest Entomology 11 | | 2 |
| Rhetoric 13, 14 (A and S)‡ | 3 | 3 |
| Forestry 21, 22 (Thesis) | 2 | 2 |
| *Public Lands (American History 10) (A and S)‡ | | (2) |
| †Forestry 23, 24 | (2 to 4) | (2 to 4) |
| †Forestry 25, 26 | (2 to 4) | (2 to 4) |

## HOME ECONOMICS GROUP

### FIRST YEAR

| | | |
|---|---|---|
| Home Economics 1, 2 (Sewing and Design) | 3 | 3 |
| Rhetoric 1, 2 (A and S)‡ | 2 | 2 |
| Chemistry 1, 2 (A and S)‡ | 2 | 2 |
| Language, Ancient or Modern (A and S)‡ | 5 | 5 |
| Botany, or Zoology (A and S)‡ | 3 | 3 |
| Physical Training | 1 | 1 |
| | 16 | 16 |

### FIRST YEAR FOR STUDENTS WHO HAVE NO ENTRANCE CREDIT IN CHEMISTRY

| | | |
|---|---|---|
| Home Economics 1, 2 (Sewing and Design) | 3 | 3 |
| Home Economics 15, 16 (Elementary Cookery) | 2 | 2 |
| Rhetoric 1, 2 (A and S) | 2 | 2 |
| Physical Training | 1 | 1 |
| Chemistry A, B (A and S) | 3 | 3 |
| Language (Ancient or Modern) (A and S) | 5 | 5 |
| | 16 | 16 |

### SECOND YEAR

| | | |
|---|---|---|
| Home Economics 3, 4 (Foods: Selection and Preparation) | 3 | 3 |
| Chemistry 3 (Organic) (A and S)‡ | 5 | |
| Chemistry 14 (Food and Sanitary) (A and S)‡ | | 5 |
| Physiology 1, 2 (A and S)‡ | 3 | 3 |
| English Language or Literature (A and S)‡ | 5 | 5 |
| Physical Training | 1 | 1 |
| | 17 | 17 |

* See second note at bottom of preceding page.

† Work in one of these courses or an equivalent along some other forestry line is required. The number of hours credit may be arranged by consulting the head of the department.

‡ See third note at bottom of page 17; (E) refers to the College of Engineering.

| THIRD YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Home Economics 5, 6 (Advanced Cookery) | 3 | 3 |
| Home Economics 7, 8 (Industrial Art) | 3 | 3 |
| Bacteriology 2*a* (A and S)* | | 2 |
| Philosophy, Sociology, or Political Economy (A and S)* | 3 | 3 |
| Electives | 6 | 4 |
| | 15 | 15 |
| FOURTH YEAR | | |
| Home Economics 9, 10 (Household Administration) | 2 | 2 |
| Education 4 (Child Study) (A and S)* | 3 | |
| Greek 40 (Interpretation of Art) (A and S)* | | 2 |
| Physical Education 6 (Emergencies—First aid to the injured) | | 1 |
| History | 3 | 3 |
| Electives | 7 | 7 |
| | 15 | 15 |

* See third note at bottom of page 17.

## COURSES OF INSTRUCTION

Students are advised to consult the heads of departments before registering.

For courses that may be chosen to apply as "Electives" see the general "Courses of Instruction" of the College of Arts and Sciences, the College of Engineering, and the Teachers College.

Courses included between brackets are not given in 1910-1911.

### AGRICULTURAL BOTANY

Professor Wilcox, Adjunct Professor Coons

#### GENERAL INFORMATION

The office, laboratories and lecture room are located in Agricultural Hall. For use in the lectures, the department has a very extensive collection of lantern slides, charts and other illustrative material. An extensive pathological herbarium and collection of economic plants are being developed as rapidly as possible. The large private library of the professor of Agricultural Botany, particularly complete in phytopathology, is available for the use of advanced students. A greenhouse has recently been arranged and equipped for experimental work in physiology and pathology.

In connection with the Nebraska Seed Laboratory, maintained in cooperation with the United States Department of Agriculture, advanced students may secure practical training in seed testing. A limited number of advanced students with proper training can be offered exceptional opportunities for research work in phytopathology. In many cases it is possible for such students to receive compensation for work done in connection with problems being investigated by the department.

#### GRADUATE WORK

This department is especially prepared to offer graduate work in phytopathology and phytophysiology. To successfully undertake research work in this subject, students should have a broad training in general botany, chemistry and zoology; should be able to read French and German and sohuld have taken Agricultural Botany 1, 2 and 3, 4. Before registration students should consult the head of this department.

#### FOR UNDERGRADUATES AND GRADUATES

1. **Elementary Plant Pathology**—A broad survey of the development and present condition of our knowledge of plant disease. Special attention will be given to diseases having their origin in malnutrition and unfavorable chemical and physical factors. The most typical and important diseases of our leading cultivated plants will be described in some detail. The lab-

oratory work will acquaint the student with the current technique, including the preparation and use of culture media, the establishment of pure cultures and artificial inoculation. Three hours lecture. Six hours laboratory. Three hours credit. Students are advised to take General Botany 15, 16 and 19, 20 before or with this course. Professor Wilcox

2. **Elementary Plant Pathology**—1 continued. Second semester.

3. **General Plant Pathology**—Prerequisite: Agricultural Botany 1, 2. An advanced course of lectures designed to furnish such a broad working basis as to enable one to engage in original research in plant pathology. The following are some of the subjects to be discussed: the physiology and cytology of resistance and immunity, origin of parasitism, specialization, epidemics and climatic factors, etc. Two hours lecture. Four hours reading. Two hours credit. First semester. Professor Wilcox

4. **General Plant Pathology**—3 continued. Second semester.

5. **Seed Testing**—Methods of seed analysis, including quantitative and qualitative methods of making purity determinations. Identification of foreign seeds. Liability and purity tests of the seeds of the principal cereals, forage crops, and horticultural crops. One hour lecture. Six hours laboratory. Three hours credit. First semester. Professor Wilcox

6. **Seed Testing**—5 continued. Second semester.

7. **Forest Plant Pathology**—A special course designed to furnish information as to the principal diseases of forest trees. Three hours lecture. Four hours laboratory. Three hours credit. First semester.
Professor Wilcox

FOR GRADUATES

9. **Problems in Plant Pathology**—Prerequisite: Agricultural Botany 1, 2. Assigned problems in plant pathology. Laboratory work with hours for consultation. Two to five hours credit. First semester.
Professor Wilcox

10. **Problems in Plant Pathology**—9 continued. Second semester.

11. **Problems in Plant Physiology**—Assigned problems in the nutrition, growth, irritability or reproduction of plants. Laboratory work with hours for consultation. Two to five hours credit. Professor Wilcox

12. **Problems in Plant Physiology**—11 continued. Second semester.

SCHOOL OF AGRICULTURE COURSES

A. **Elementary Agricultural Botany**—This course offers a general introduction to the science of botany. The students will become acquainted with the general morphology of the flowering plants. This will be accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. One hour lecture. Four hours laboratory. Three hours credit. First semester.
Professor Wilcox, Adjunct Professor Coons

B. **Elementary Agricultural Botany**—Elementary study of types of plants selected as far as possible with reference to their economic report in agriculture. One hour lecture. Four hours laboratory. Three hours credit. Second semester. Professor Wilcox, Adjunct Professor Coons

C. **Elementary Plant Physiology**—An elementary study of the growth, nutrition, irritability and reproduction of plants with special reference to the application of these facts to plant culture. Two hours lecture. Two hours laboratory. Two hours credit. First semester.
Professor Wilcox, Adjunct Professor Coons

D. **Elementary Plant Pathology**—An elementary study of the more common diseases of cultivated plants; the best methods of controlling these by spraying, proper methods of cultivation, use of resistant varieties, etc., will be discussed. Two hours laboratory. Two hours lecture. Second semester. Professor Wilcox, Adjunct Professor Coons

E. **Home Economics Botany**—This course offers a general introduction to the science of botany. The students will become acquainted with the general morphology of the flowering plants. This will be accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. One hour lecture. Four hours laboratory. Three hours credit. First semester. Adjunct Professor Coons

F. **Home Economics Botany**—An elementary study of the bacteria, yeasts and fungi in the home. One hour lecture. Four hours laboratory. Three hours credit. First semester. Adjunct Professor Coons

## GENERAL BOTANY

Head Professor Bessey, Assistant Professor Pool, Adjunct Professor Sponsler, Miss Walker

1. **General Botany**—Introduction to structure of plants (cells, tissues, tissue systems). General morphology, physiology, and classification of representative species, including blue-green and green algæ. Three hours lecture and additional readings. Four hours laboratory. Three hours credit. First semester. Head Professor Bessey, Miss Walker, Mr. Pipal

2. **General Botany**—The general morphology, physiology and classification of representative species of brown algæ to flowering plants. Three hours lecture and additional readings. Four hours laboratory. Three hours credit. Second semester.
Head Professor Bessey, Miss Walker, Mr. Pipal

13. **Flowering Plants**—Principles of the classification of Monocotyledons and their particular application to the grasses. Two hours lecture. Four to twenty hours laboratory work in the field and herbarium. Two to six hours credit. First semester.
Head Professor Bessey, Assistant Professor Pool

14. **Flowering Plants**—Principles of the classification of Dicotyledons and their particular application to the Composites. Otherwise as in course 13. Second semester. Head Professor Bessey, Assistant Professor Pool

19. **Plant Physiology**—An introductory study of the processes and functions of plants. Including imbibition; osmosis, absorption; the relation of the soil and of solutes to the plant; the movement of substances in the plant body; transpiration; guttation; bleeding; maintenance and bodily form; turgor; secretion, waste products. Three hours attendance. Six hours laboratory. Three hours credit. First semester.

Assistant Professor Pool

20. **Plant Physiology**—Photosynthesis; the question of the manufacture and assimilation of food; stomatal relations; the nitrogen cycle; the storage and digestion of foods; respiration and fermentation; growth and movement with special reference to the influence of external factors upon these phenomena; irritability; stimulus and response; correlation; reproduction of plants; death. Three hours attendance. Three hours credit. Six hours laboratory. Second semester. Assistant Professor Pool

35. **Dendrology**—Brief review of the morphology and physiology of the tree. Forest regions and forest types. Distribution. Economic importance. Detailed study of dendrological and silvical characteristics of about one hundred important forest trees. Two hours attendance. Four hours laboratory and field work. Two hours credit. First semester.

Adjunct Professor Sponsler

36. **Dendrology**—35 continued. Three hours attendance. Six hours laboratory and field work. Three hours credit.

37. **The Study of Woods**—Study of structure of important woods leading to identification and relation of structure to strength, weight, shrinkage, and other physical properties. Primarily for foresters; engineers may elect this course for two hours credit after consultation with the instructor. Prerequisites for foresters: Botany 6. Two hours attendance. Six hours laboratory. One hour reading. Three hours credit. First semester.

Adjunct Professor Sponsler

## AGRICULTURAL CHEMISTRY

Head Professor Alway, Adjunct Professor Trumbull

All courses in the department are given in Experiment Station Hall.

The work offered by the Department of Agricultural Chemistry is either research or direct preparation for research. In general only graduates, or undergraduates in their senior year, are prepared for this work, which is largely individual and the nature of which depends largely upon the student's previous work in chemistry, geology, physics and soils.

### UNDERGRADUATE WORK

Courses 2, 4, 5 and 6 are open to undergraduates who previously have had sufficient training. On account of the varied nature of the problems presenting themselves in agricultural chemistry students are urged to acquire as thorough a training as possible in inorganic, organic, analytical, and physical chemistry before specializing in this department. Only those whose training in pure chemistry has been thorough may hope to succeed in dealing with problems in agricultural chemistry.

GRADUATE WORK

Courses 2, 4, 5 and 6 outlined below are primarily for graduates. In addition to these courses, graduate students may select problems in the chemistry of plants. The nature of the problem assigned to any particular student depends both upon his previous training and upon the lines of investigation in progress at the Experiment Station.

PRIMARILY FOR GRADUATES

2. **Analysis of Agricultural Products**—A course in the quantitative analysis of grains, flours, fruits, dairy products, sugar beets and fodders. Prerequisite: courses 1, 2, 3, 4, 7, and 8 in Chemistry, or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester. Head Professor Alway

4. **Analysis of Soils and Fertilizers**—A course in the quantitative chemical analysis of soils and fertilizers. Prerequisite: courses 1, 2, 3, 4, 7, and 8 in Chemistry, or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester.
Head Professor Alway

5. **Research Work in Soils**—The investigation in the field, in the laboratory, or in both, of some problem in soil chemistry or soil physics. Prerequisite for undergraduates: courses 7, 8, 9, and 10 in Agronomy. Two to five hours credit. First semester. Head Professor Alway

6. **Research Work in Soils**—5 continued. Second semester.

SCHOOL OF AGRICULTURE COURSES

A. **Elementary Agricultural Chemistry**—General principles of chemistry. Special emphasis upon chemistry of agriculture. Three hours credit. First semester. Adjunct Professor Trumbull

B. **Elementary Agricultural Chemistry**—A continued. Second semester.

## AGRICULTURAL EDUCATION

Head Professor Davisson

1. **Agricultural Economics**—Beginning by calling attention to the fact that Agricultural Economics consists in applying the principles of general economics to the production, distribution, and consumption of agricultural wealth, the course deals with: (1) The factors of agricultural production; the economic properties of the factors of production; the guiding principle in the organization of the farm; the organization and size of the farm; the forces and conditions which determine the prices of agricultural products; distribution of wealth with especial reference to the rent of farm land and to the conditions which enable farmers to save from their earnings; the principles to be followed in estimating the value of farm land and equipment. (2) All conditions which contribute to the efficiency of labor are considered; these include careful consideration of those things which

must characterize rural environment in order that the health of the dwellers therein may be assured and their strength be of that quality so essential to him who works on the farm; the mental qualities which must be looked for in farm laborers and what sort of educational material must be provided in order that ideal mental qualities may be induced; agricultural education is discussed as a means by which the efficiency of those who work on the farm may be increased; how the principles of division of labor may be used on the farm is given careful treatment. The systems of distribution by which farm labor may be reimbursed for the sacrifices made are discussed with a view to determining whether cooperation between employer and laborer is an advantage to agricultural production or the contrary. (3) The law of diminishing returns from the land is discussed under the eight topics usually assigned by Economists as a means by which its operation may be in a measure prevented; the connection between it and the Law of Malthus is emphasized and here again agricultural education is discussed with reference to its necessity for people in general in order that the proper foundations of an enduring civilization may be laid. (4) The last general subject to be considered is distribution. The systems of distribution are carefully defined and the student is led to determine which in his opinion is the best. The marketing of farm products is given careful consideration. Whether agricultural products should find a home market or an international one is given detailed discussion. The ultimate system of distribution and of agricultural industry that must be adopted in order that the highest agricultural development may take place is considered as carefully as time will permit. (5) Rural sociology is investigated and all phases of rural life studied for the purpose of giving the student an adequate notion of what conditions now prevail in rural communities, and of what should be done in order to improve and make them ideal. Senior year. Second semester. Three hours attendance. Three hours credit.

2. **Agricultural Pedagogy**—The subject matter which characterizes the various subjects for instruction in agriculture is given careful consideration, the first purpose being to give the student, even though he has not taken all the subjects known as agricultural, a general concept of what agricultural education means. Each subject is then taken up and discussed with the view of determining its educative value. In this portion of the subject the student must become familiar with the elementary terms used in educational psychology. The best methods of imparting instruction in agricultural subjects to rural and to high school students are then considered. The knowledge which should precede the study of every agricultural subject is carefully discussed, for too often attempts are made by teachers in rural schools to give agricultural instruction without having built a proper foundation. The time which should be devoted to agriculture in the rural schools and in the high school and what materials can best be used for instruction are discussed, and an attempt is made to formulate a rational system of instruction which will, with the ordinary scientific subjects of the high school, constitute an organic whole. Senior year. First semester. Two hours attendance. Two hours credit.

## AGRICULTURAL ENGINEERING

Professor Chase, Adjunct Professor Shedd, Mr. Baer, Mr. Sjogren.

This work has formerly been under the heading "Farm Mechanics," but with the increasing demand for men in the work and the broadening of the course it has been deemed best to change the title of the department to Agricultural Engineering.

With this change of title, the College of Engineering will offer a course leading to the degree of Bachelor of Science in Agricultural Enginering. The outline of this course is given under the College of Engineering exhibits.

As the College of Agriculture has adopted a broader elective system, it is possible for students desiring to take more agriculture than is offered in the Agricultural Engineering group to register in the College of Agriculture and elect sufficient of the exact sciences and Agricultural Engineering to give them a good course in Agricultural Engineering.

A graduate who has completed such a line of work should be well fitted for handling large farms which are conducted on the intensive plan. Also, he will be in excellent shape to take up the more technical lines of agriculture.

1. **Farm Machinery**—A part of former course 3. All lines of agricultural implements, tillage, grading, seeding, harvesting, threshing, pumping and fertilizing machinery. The uses of concrete, field work with implements and the traction dynamometer. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. First semester.

Professor Chase, Adjunct Professor Shedd

2. **Farm Motors**—All classes of farm motors, the horse, windmill, steam boilers, steam engines, traction engines, gasoline engines, electric motors, and water motors, the measurement of power, economy tests, etc. Prerequisite: Mathematics 1, Physics 1 and 2. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. Second semester.

Professor Chase, Adjunct Professor Shedd

3. **Rural Architecture**—The laying out of farms, the study of houses, barns, granaries, sheds, fences, equipment, water systems, sewage, etc. Prerequisite: Mathematics 1. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. First semester.

Professor Chase

4. **Farm Drainage and Rural Highways**—A study of methods of drainage, estimates, laying out drainage systems, etc. A study of the highways of Nebraska, construction and reconstruction, haulage, and highway laws. The first half of the time of this course is given to drainage, and the second to highways. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. Second semester.

Professor Chase, Adjunct Professor Shedd

5.* **Wood Work and Interior Finishing**—Practice at the bench with light carpenter tools and the care of edged tools for the home. Work in the construction of furniture, painting, oiling, and finishing the same. Instruction in the planning of the home, the designing, selection and care of the interior finish. One hour attendance. Two hours practice. One hour credit. For women only. First semester. Mr. Baer

6. **Spraying Machinery**—The designing of spraying outfits, practice with the gasoline engine, mixers and pumps and a study of nozzles. Three hours laboratory. One hour credit. First semester. Professor Chase

7. **Research Work in Rural Architecture, Farm Drainage and Rural Highways**—The wide range of these subjects offers a great field of original investigations, drainage, water supplies, heating, fencing, building materials, sewage, road construction, etc. Prerequisite: Courses 3 and 4. From 6 to 15 hours laboratory or reading. From 2 to 5 hours credit.
Professor Chase, Adjunct Professor Shedd

8. **Research Work in Farm Machinery, Farm Motors, and Farm Equipment**—The large equipment of machinery in the department gives an excellent opportuntiy for testing both in the laboratory and in the field, standardizing traction tests, calibration and economic tests of both farm machinery and farm motors. Prerequisite: Courses 1 and 2. From 6 to 15 hours laboratory or reading. From 2 to 5 hours credit.
Professor Chase, Adjunct Professor Shedd

SCHOOL OF AGRICULTURE COURSES

A. **Wood Work**—Practice with the care, use and adjustment of tools. Exercises in bench work. Four hours attendance. Two hours credit. First term. Mr. Baer

B. **Wood Work**—Farm building construction. Prerequisite: course A. Four hours attendance. Two hours credit. Second term. Mr. Baer

C. **Forge Work**—Practice in forging, welding, tempering, pipe fitting, babbiting, and repairing of machinery. Four hours attendance. Two hours credit. First term. Mr. Sjogren

D. **Forge Work**—Continuation of course C. Prerequisite: Course C. Four hours attendance. Two hours credit. Second term. Mr. Sjogren

E. **Farm Machinery**—A study of all lines of agricultural implements, tillage, grading, seeding, harvesting, pumping, and fertilizing machinery. One hour attendance. Two hours credit. Three hours laboratory.
Professor Chase, Adjunct Professor Shedd

F. **Farm Motors**—Continuation of course E with the addition of work with windmills, steam boilers, steam engines, gasoline engines, and traction engines. The determination of brake horse power and other tests in farm motors. One hour attendance. Three hours laboratory. Two hours credit.
Professor Chase, Adjunct Professor Shedd

* Course 5 for undergraduates; courses 1 to 4 and 6 to 8 for undergraduates and graduates.

G. **Rural Architecture**—The laying out of farms, the study of houses, barns, granaries, sheds, fences, equipment, water systems, sewage, heating, etc. Practice at drawing and designing. One hour attendance. Two hours designing. Two hours credit. Professor Chase

H. **Rural Architecture**—Continuation of course G. One hour attendance. Two hours designing. Two hours credit. Professor Chase

I. **Wood Work and Finishing** (Girls)—Practice with use, care, and adjustment of tools. Interior construction. Painting, oiling, and staining of woods. One hour attendance. Two hours practice. One hour credit. First term. Mr. Baer

J. **Wood Work and Finishing** (Girls)—Continuation of course I. One hour attendance. Two hours practice. Two hours credit. Second term. Mr. Baer

## AGRONOMY AND FARM MANAGEMENT

Professor Pugsley, (Professor Montgomery,) Adjunct Professor Barker (Soils), Adjunct Professor Hopt (Crops)

Students should have at least one year's work in Botany, Chemistry and Geology. Courses are offered to meet the needs of (1) those students taking general culture courses, or interested in farm operations or the management of land; (2) those fitting themselves to be agricultural teachers or investigators.

Excellent opportunities are offered for graduate students who desire to take up research work. Training in natural and physical sciences is necessary for students taking graduate work. Lines of research work are open to students of this class upon consultation with the head of the department. Graduate courses will also be found under Experimental Agronomy.

### FOR UNDERGRADUATES AND GRADUATES

1. **Forage Crops**—Classification, method of improvement of forage crops, their adaptability and distribution, methods of seeding and harvesting, treatment of pastures. Two hours attendance. Four hours preparation. Two hours credit. First semester. Professor Pugsley

2*a*. **Cereal Crops**—Classification and methods of improvement of cereal crops, their adaptability and distribution, time and methods of seeding, harvesting and cultivating. To be taken in connection with course 2*b*. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Professor Pugsley

2*b*. **Grading and Judging Grains**—Laboratory practice in describing, scoring, judging and inspecting cereals by outlines and score cards. Methods of breeding to improve these cereals. To be taken in connection with course 2*a*. Four hours laboratory. Two hours preparation. Two hours credit. Second semester. Adjunct Professor Hopt and Assistants

3. **Farm Management**—Dealing with farm problems such as farm loca-

tion, equipment, labor, marketing, accounting. Should be preceded by courses 1, 2*a*, 7 and 9. Two hours attendance. Four hours preparation. Two hours credit. First semester. Professor Pugsley

4. **Farm Management Seminar**—Prerequisite: course 3. This course deals with problems in farm management and is a continuation of course 3. Special lines of investigation relating to farm management are taken up by the students. Three hours meeting, preparation and library. One hour credit. Second semester. Professor Pugsley

5. **Advanced Field Crops**—Study of methods of crop treatment, commercial grading of grains and hays—lectures, laboratories and readings. Prerequisite: Courses 1, 2*a*, 2*b*, 7 and 9. Three to fifteen hours work. One to five hours credit. First semester.
Professor Pugsley, Adjunct Professor Hopt

6. **Advanced Field Crops**—5 continued. Second semester.

7. **Soils**—Origin, nature and properties of soils, their relation to plant growth and crop production. Should accompany course 9. First semester. Two hours attendance. Four hours preparation. Two hours credit.
Adjunct Professor Barker

8. **Soils**—7 continued. Second semester.

9. **Soil Physics**—Physical properties, weight, pore space, specific gravity, soil moisture, soil temperature, effect of various forms of tillage on plant growth. Should accompany course 7. Laboratory, four to eight hours attendance. Two to four hours preparation. Two to four hours credit. First semester. Adjunct Professor Barker and Assistants

10. **Soil Physics**—9 continued. Mechanical analysis and elementary soil mapping. Second semester.

11. **Soil Management**—Principles governing the management of land, crop system, tillage, rotations, manuring, fertilizing, drainage and aeration. Prerequisite: Courses 1, 2*a*, 7 and 9. Two hours attendance. Four hours preparation. Two hours credit. First semester.
Professor Pugsley, Adjunct Professor Barker

11*a*. **Soil Management Laboratory**—Given in connection with 11. Treating of principles governing the management of land from the practical standpoint. Four hours attendance. Two hours preparation. Two hours credit. First semester. Adjunct Professor Barker

13. **Advanced Soils**—Factors influencing the productive capacity of lands. Lectures, readings, and laboratory. Credit according to work. To be arranged with head of department and assistant. Prerequisite: Courses 1, 2*a*, 7 and 9. First semester. Adjunct Professor Barker

14. **Advanced Soils**—13 continued. Second semester.

15. **Crop Management**—A practical course for the student who expects to operate a farm or manage farms for other people. Dealing with the management of various farm crops. Primarily designed for school of agri-

culture credit. Two hours attendance. Four hours preparation. Two hours credit. First semester. To be arranged with head of department and assistant. Professor Pugsley, Adjunct Professor Hopt

17. **Farm Accounting**—A course dealing with a simple practical system of farm accounting. Legal papers with which the farmer should have a working knowledge will also be discussed, and the problem of the farmers' library will receive some attention. Two hours attendance. Four hours preparation. Two hours credit. First semester.
Professor Pugsley

19. **Agronomy**—Given only during summer session. A combined course in field crops and soils, especially prepared for those desiring to teach agriculture in secondary schools. Five lectures. Ten hours laboratory. Three hours credit. Summer session. Professor Pugsley and Assistants

SCHOOL OF AGRICULTURE COURSES

A. **Crop Management**—History, composition, improvement, production, and disposal of principal cereal and forage crops with special reference to Nebraska conditions. Three hours attendance. Three hours credit. First semester. Adjunct Professor Hopt

A*a*. **Crop Management Laboratory**—To accompany lectures in A. Two hours laboratory. One hour credit.

B. **Crop Management**—A continued. Second semester.

C. **Crop Laboratory**—Instruction in types, varieties, and quality of cereals, judging by score cards. Identification of grass and legumes and weed seeds. Four hours laboratory. Two hours credit. First semester.
Adjunct Professor Hopt and Assistants

D. **Crop Laboratory**—C continued. Second semester.

E. **Farm Management**—Practical farm problems, such as location, laying out, equipment, system of rotation, and marketing. Two hours attendance. Two hours credit. First semester. Professor Pugsley

F. **Farm Management**—E continued. Farm accounting and legal papers. Second semester.

G. **Soil Tillage and Management**—Order, deposition and natural transportation of soils, physical and chemical constitution of soils and subsoils, size of soil particles in relation to drainage, aeration, water storage and capillarity. Two hours attendance. Two hours credit. First semester.
Adjunct Professor Barker

H. **Soil Tillage and Management**—G continued. Second semester.

I. **Soil Laboratory**—Formation of soil from rock, study of texture and its influence on plant growth. Humus, soil moisture, movement of air, specific gravity and volume weight. Four hours laboratory. Two hours credit. First semester. Adjunct Professor Barker and Assistants

J. **Soil Laboratory**—I continued. Second semester.

## EXPERIMENTAL AGRONOMY

Professor Montgomery (Professor Pugsley), Adjunct Professor Hopt

The courses offered in this department are intended primarily for those desiring to take up advanced work in Agronomy. Extensive lines of investigation are under under way and opportunity is offered to work up some special line. All general courses in Farm Management are prerequisite. Students taking this work are expected to spend the summer season on the experimental farm, for which a moderate compensation is allowed. Only a limited number of students can be accommodated.

1. **Investigation**—Satisfactory work on some special line of investigation with assigned readings. Six to twenty hours laboratory. Thesis required. Two to five hours credit. First semester.
Professor Montgomery

2. **Investigation**—Continuation of 1. Second semester.

3. **Methods of Investigation**—Compilation of experimental data. Correlation tables. Statistical methods. Six to twenty hours laboratory. Two to five hours credit. Professor Montgomery

4. **Methods of Investigation**—Continuation of 3. Second semester.

## ANIMAL HUSBANDRY

Head Professor Smith, Assistant Professor Rail, Instructor ————

PRIMARILY FOR UNDERGRADUATES

1. **Breeds of Live Stock**—History of different breeds of live stock. Methods in development of breeds. Characteristics and adaptability of improved breeds. Must be accompanied by course 3. Two hours attendance. Four hours preparation. Two hours credit. First semester.
Assistant Professor Rail

2. **Principles of Animal Breeding**—Theory and practice of animal breeding, variation, correlation, heredity, prepotency and selection. Grading, crossing, line breeding, and inbreeding, pedigrees. Two hours attendance. Four hours preparation. Two hours credit. Second semester.
Assistant Professor Rail

3. **Judging Live Stock**—Practice with the score card. Competitive judging of classes by ages of horses, cattle, sheep, and swine. Must be accompanied by course 1. Four hours attendance. Two hours preparation. Two hours credit. Assistant Professor Rail

4. **Judging Live Stock**—Continuation of course 3, which must precede it. Two hours attendance. One hour preparation. One hour credit. Second semester. Head Professor Smith

5. **Animal Nutrition**—General composition of animal body. Composition and digestibility of foods. Digestion, absorption, and excretion. Feeding standards. Methods of feeding all classes of farm animals. Influence

of food on animal form and on quality of meat and milk. Three hours attendance. Six hours preparation. Three hours credit. Second semester.
Head Professor Smith

6. **Animal Nutrition**—5 continued. Advanced course. Review of recent bulletins on feeding. Methods employed in conducting experiments in feeding. Two hours attendance. Four hours preparation. Two hours credit. First semester. Adjunct Professor ————

7. **Judging Live Stock**—Advanced course. Prerequisite: Courses 3 and 4. Two hours attendance. One hour preparation. One hour credit. First semester. Head Professor Smith

8. **Judging Live Stock**—Continuation of 7 and must be preceded by it. Two hours attendance. One hour preparation. One hour credit. Second semester. Head Professor Smith

9. **Judging Live Stock**—Continuation of 8. Two hours attendance. One hour preparation. One hour credit. First semester.
Head Professor Smith

10. **Animal Nutrition**—Seminar. Must be preceded by 5 and 6. Two hours attendance. Two hours preparation. One hour credit. Second semester. Head Professor Smith

SCHOOL OF AGRICULTURE COURSES

A. **Breeds and Live Stock Judging**—History and development of horses, breeds of cattle, sheep, and swine. Judging breeds by the score card and by competitive methods. Selecting animals for feeding purposes, judging meat carcasses. Three hours attendance. Three hours credit. First and second semesters.
Assistant Professor Rail, Adjunct Professor ————

B. **Principles of Breeding**—Elementary study of heredity, variation, and selection; prepotency; effect of pure-bred animals in improving common types. Three hours attendance. Three hours credit. First and second semesters. Assistant Professor Rail

C. **Feeding Live Stock**—Elementary discussion of composition of animal body and of foods. Influence of food on animal form. Economical feeding of farm animals. Five hours attendance. Five hours credit. Second semester. Adjunct Professor ————

D. **Judging Live Stock**—Advanced course for third year students. Prerequisite: course 8. One hour attendance. One hour credit. First semester.
Assistant Professor Rail

E. **Judging Live Stock**—D continued. Second semester.

## ANIMAL PATHOLOGY

Professor Gain, Assistant Professor Sturdevant

2. **Diseases of Farm Animals**—Causes and prevention of animal diseases. Emergency treatment and minor surgery. Three hours attendance. Six hours preparation. Three hours credit. Second semester.
Associate Professor Gain

SCHOOL OF AGRICULTURE COURSES

A. **Anatomy and Physiology**—Study of skeletons of horse and cow. Anatomy of digestive system and physiology of digestion. Circulatory system and study of blood. Three hours attendance. Three hours credit. First semester. Assistant Professor Sturdevant

B. **Anatomy and Physiology**—Respiration. The nervous system. The senses. The foot. Generation and development. Three hours attendance. Three hours credit. Second semester. Assistant Professor Sturdevant

C. **Diseases of Farm Animals**—Hereditary diseases. Diseases of respiratory system. Prevention of digestive diseases. Minor emergency surgery. Prerequisite: Anatomy and Physiology A and B. Three hours attendance. Three hours credit. First semester. Professor Gain

D. **Diseases of Farm Animals**—Contagious diseases. Hygiene and Farm Sanitation. Three hours attendance. Three hours credit. Second semester. Professor Gain

E. **Elements of Physiology**—Bones of skeleton. Digestion. The circulatory system. Respiration. The senses. Drugs and stimulants. Two hours attendance. Two hours credit. First semester.
Assistant Professor Sturdevant

**F. Hygiene and Sanitation**—Personal hygiene. Domestic hygiene. Ventilation and water supply. Public hygiene. Two hours attendance. Two hours credit. Second semester. Assistant Professor Sturdevant
(Offered in the course for women in the School of Agriculture.)

## DAIRY HUSBANDRY

Head Professor Haecker, Adjunct Professor French

2. **General Survey of Home Dairying**—Composition of milk and dairy products. Production, handling, testing, and uses of milk. The creaming of milk by centrifugal separators. Ripening, testing, and churning of cream. Making, scoring, and marketing butter; cheese making. Dairy stock breeding, feeding and judging. Two hours attendance. Six hours laboratory. Four hours credit. Second semester.
Head Professor Haecker, Adjunct Professor French

3. **Dairy Stock Judging**—A special course in dairy stock judging. Work given with the four dairy breeds—Ayrshires, Guernseys, Holsteins, and Jerseys. Two hours attendance. One hour preparation. One hour credit. First semester. Head Professor Haecker

4. **Economic Dairying**—Advanced study in dairy husbandry, taking up the scoring of dairies by the score card system and the management of the market dairy. Prerequisite: Course 2. Text-book, with readings in station bulletins and publications. Two hours attendance. Two hours credit. Second semester. Adjunct Professor French

6. **Dairy Husbandry**—Prerequisite: Courses 2 and 4. Advanced

studies in experiment station findings. A reading course with one lecture a week. Eight hours preparation. Three hours credit. Second semester.
Head Professor Haecker

SCHOOL OF AGRICULTURE COURSES

A. **General Study of Home Dairying**—Secretion, composition and production of milk. Practice with the various centrifugal hand-separators. Butter making, milk and cream testing. Two hours attendance. Four hours laboratory. Two hours credit. First term.
Head Professor Haecker, Adjunct Professor French

B. **General Study of Home Dairying**—A continued. Practice with the lactometer. Cheese making. Care and judging of dairy stock. Milk and its products. Two hours attendance. Four hours laboratory. Two hours credit. Second term.
Head Professor Haecker, Adjunct Professor French

## ENTOMOLOGY

Head Professor Bruner, Assistant Professor Swenk, Mr. Dawson

Courses 1 and 2 are open to all students, and they, or their equivalent, must precede all other courses in Entomology except 3 and 4*a*. Courses 3 and 4, or 4*a*, must precede courses 7 and 8.

GRADUATE WORK

A candidate for the degree of Master of Arts in Entomology must have had Zoology 1 and 2, or their equivalents, in addition to Entomology 1 and 2. He should be able to read Latin and either French or German, or both.

The department has in Experiment Station Hall a laboratory fully equipped for the use of students engaged in research work along systematic lines, and also a modern insectary well provided with apparatus useful in facilitating research in Economic Entomology for those investigating the life-histories of insects. A collection of insects numbering approximately 135,000 pinned specimens is well housed in special cabinets and Schmitt boxes and is available for study by advanced students; it is particularly rich in Hymenoptera, Diptera and Orthoptera and contains many specimens of these orders named by specialists, including a considerable number of their types. While the greater portion of the collection is representative of our state and national fauna, it is also exceedingly rich in exotic material from Argentina, Costa Rica and Mexico. The library contains practically complete files of all American and the principal foreign entomological periodicals as well as most of the special monographs in the various orders, and is readily accessible to advanced students, while the excellent economic libraries of the State Entomologist and Nebraska Experiment Station are close at hand and available for reference. The results of studies carried on in the department are issued consecutively in a numbered series.

MASTER OF ARTS

As his major for the degree of Master of Arts the student may choose either courses 15 and 16 or 17 and 18. He may elect his first and second minors from the other courses offered as graduate studies in this department or from the courses offered as graduate studies in the Department of Zoology.

The graduate work of this department is of so technical a nature, being chiefly designed to prepare students as government, state or experiment station investigators in Entomology, or as museum scientists, that each student should consult with the head of the department before registering.

PRIMARILY FOR UNDERGRADUATES

1. **General Entomology**—A general survey of the class Insecta, with introductory lectures on arthropod structure, physiology, transformations, distribution and behavior, followed by a consideration of the characteristics of the orders, suborders and principal families of insects, and the life-histories and habits of typical species. Laboratory dissections of typical forms of the various orders, correlated with the lectures. Three hours attendance. Six hours laboratory and preparation. Three hours credit. First semester.

Head Professor Bruner, Mr. Dawson

2. **General Entomology**—1 continued. In addition, general work in the collection and classification of insects, and the study of microscopical forms. Three hours attendance. Six hours laboratory and preparation. Three hours credit. Second semester.

3. **Economic Entomology**—An introduction to the practical phases of entomology, presenting the broad principles of insect damage and control. Types of insect injury; beneficial insects; parasitism; gall formation; fungous and bacterial diseases of insects; climatic influence on insect control; cultural preventives and artificial remedies in fighting insect pests. Assigned readings and laboratory work in rearing insects and following out life-histories in the insectary, designed principally to give the student a general view of insect metamorphosis and of insectary methods and the use of apparatus. Two hours attendance. Four hours laboratory and preparation. Two hours credit. First semester.

Head Professor Bruner, Assistant Professor Swenk

4. **Economic Entomology**—3 continued. Detailed studies of our most conspicuous insect pests concerning their life-histories and habits, and preventives and remedies for them, and in the spring observations of their work in the field. One hour attendance. Five hours laboratory, preparation and field work. Two hours credit. Second semester.

4*a*. **Economic Entomology**—A combination of courses 3 and 4, especially for second year students in the Agricultural Group. Three hours attendance. Nine hours laboratory, preparation and field work. Four hours credit. Second semester.

Head Professor Bruner, Assistant Professor Swenk

FOR GRADUATES AND UNDERGRADUATES

5. **Systematic Entomology**—A study of the principles and machinery of classification as applied to insects. Taxonomic groups; evaluation of characters; evolution of organs; dimorphism; nomenclature codes; synonymy; types; methods of description; construction of tables; use of reference books; faunal areas; ecological methods. Laboratory work with various insect groups designed to give a conception of the varying value of classificatory characters. Two hours attendance. Seven or more hours laboratory. Three or more hours credit. First semester.

Assistant Professor Swenk

6. **Systematic Entomology**—5 continued. In addition, a detailed study of entomological technique involving the methods of collecting, preparing and preserving entomological specimens for the cabinet and museum; entomatoxy; use of entomological apparatus; entomography; entomological literature and methods of publication; bibliography, index and catalog compilation. Two hours attendance. Seven or more hours laboratory and field work. Three or more hours credit. Second semester.

7. **Advanced Economic Entomology**—A review of the groups of insects injurious to any host plant or group of plants, including the insect enemies of corn, the small grains, alfalfa and clover, grasses, potato, sugar beet, garden vegetables, apples, stone fruits, grape and bush fruits. Assigned and original laboratory work in life-histories and actual field work in investigating insect pests. Two hours attendance. Ten or more hours laboratory. Four or more hours credit. First semester.

Head Professor Bruner, Assistant Professor Swenk

8. **Advanced Economic Entomology**—7 continued. In addition, a consideration of the principal insect enemies of domestic animals and stored vegetable and animal products, the preparation and use of insecticides and methods of spraying and fumigation; nursery inspection; determination of injurious scale insects; entomological office methods; insect photography. Two hours attendance. Ten or more hours laboratory. Four or more hours credit. Second semester.

9. **Apiculture**—A general survey of the subject, including a discussion of the structure, life-history, varieties and communal life of the honey bee; methods of handling bees, formation of colonies, enlarging brood nests, controlling the colony growth, rearing of queens, honey and wax production, honey-producing plants, apiary paraphernalia and the symptoms, etiology and control of bee diseases and other enemies of bees. One hour attendance. Two hours laboratory and reading. One hour credit. First semester.

Head Professor Bruner

10. **Domestic Entomology**—A series of lectures on insects affecting the household, with suggestions for their control. House ants, cockroaches, termites, silver fish, clothes moths, carpet beetles, skippers, flour beetles and meal worms, lice, fleas, house flies, mosquitos, etc. One hour attendance. Two hours laboratory and reading. One hour credit. Second semester.

Assistant Professor Swenk

11. **Forest Entomology**—Lectures and laboratory studies of the insects of the forest. Two hours attendance. Four hours laboratory. Two hours credit. First semester. Head Professor Bruner

12. **History of Economic Entomology**—An outline of the history of entomology, particularly the development of economic entomology from the earliest efforts down to the work of Riley and the advent of the new school of entomologists. One hour attendance. Two or five hours assigned readings. One or two hours credit. Second semester.
Assistant Professor Swenk

13. **Medical Entomology**—A study of insects in their relation to the transmission of certain human diseases and of their capacity as human parasites. One hour attendance. Two or more hours laboratory. One or more hours credit. First semester. Head Professor Bruner

14. **Seminary**—The seminary work of the department is carried on by the Nebraska Entomological Society, an association of students specializing in entomology and taking advanced or graduate courses, meeting one evening each week for the presentation of papers and the discussion of current progress in entomological science. Time spent in the preparation of papers and attending meeting may be applied as laboratory work.

PRIMARILY FOR GRADUATES

These courses may be registered for repeatedly until the completion of the problem.

15. **Research in Systematic Entomology**—Independent studies under the advice of the head of the department leading to the monographing of some genus, subfamily of family of insects or the detailed study of the insect fauna of Nebraska in one of the larger groups. First semester.
Head Professor Bruner

16. **Research in Systematic Entomology**—15 continued. Second semester.

17. **Research in Economic Entomology**—Individual investigation of some special problem in economic entomology, usually the monographing of a series or group of species of economic importance. First semester.
Head Professor Bruner

18. **Research in Economic Entomology**—17 continued. Second semester.

SCHOOL OF AGRICULTURE COURSES

A. **Agricultural Entomology**—Insects in their relation to Agriculture. For men. Two hours lecture. First semester. Assistant Professor Swenk

B. **Agricultural Entomology**—Course A continued, taking up the principal insect pests of our crops. Second semester.

C. **Home Economics Entomology**—Insects in their relation to the household. For women. Two hours lecture. First semester.
Assistant Professor Swenk

D. **Home Economics Entomology**—Course C continued. Second seester.

E. **Farm Entomology**—An abridgement of courses A and B for students in the winter course. Sixteen lectures. Assistant Professor Swenk

## FORESTRY

Professor Phillips, Adjunct Professor Sponsler

Course 1 is open to all students. Before electing other courses students should confer with the head of the department. Courses 7, 8, 11, 12, 15, 16 may be taken by students in other departments; in addition to these courses 23, 24, 25, 26 may be taken as minors by graduates who are candidates for advanced degrees in other departments. Advanced students desiring to elect Silvicultural Problems (Forestry 23 and 24), or Wood Structure Problems (Forestry 25, 26), or to pursue investigations along other forestry lines, may arrange the number of credit hours by consulting with the head of the department; no more than four credit hours will be allowed for this work in any one subject in one semester.

Course 17*a* is given by Mr. F. B. Moody, Assistant State Forester of Wisconsin, Courses 12*a* and 12*b* are given by Mr. William H. Mast, of the Forest Service, U. S. Department of Agriculture. Through the courtesy of the United States Forest Service, the University is able to announce several special lectures on various forestry problems. Special work is given in emergency surgery and in camp equipment, packing horses, etc. A special course is given in rhetoric which is designed to give the forestry student preparation for the writing of scientific articles on forestry. This course is given in the Rhetoric Department, but both departments emphasize the proper use of text-book and lecture references, gathering of material, analysis, outlines, and structure. The articles are corrected for English in the Rhetoric Department and for scientific accuracy in the Forestry Department.

A degree of Master of Forestry is given upon satisfactory completion of the courses scheduled for the fifth year. This presupposes a major in Forestry and a minor in Botany. If a minor in Entomology, in Engineering or in other departments is desired, the student should confer with the heads of both departments. In addition, one year's practical field experience in forestry will be required before granting the Master's degree. This may be accomplished by vacation work or by a year's continuous work. Such experience is essential to proper training of the student and should be as diversified as possible.

1. **General Forestry**—Importance of forests and forestry in the life of the nation; relation of forestry to agriculture and to other industries; uses of wood. Two hours attendance. Four hours preparation. Two hours credit. First semester. Professor Phillips

2. **General Forestry**—1 continued. Second semester.

7. **Forest Utilization**—Uses of timber; methods of logging and milling; cost of lumbering in various forest regions: seasoning, grading, markets, final product; secondary forest products; minor forest products. Two hours attendance. Four hours preparation. Two hours credit. First semester.
Professor Phillips

8. **Forest Utilization**—7 continued. Second semester.

11. **Silviculture**—Objects of silviculture; forest soils and their relation to tree growth; forest influences on soil, climate, and stream flow; forest types; pure and mixed forests. Three hours attendance. Five hours laboratory. One hour library work. Three hours credit. First semester.
Professor Phillips

12. **Silviculture**—11 continued. Methods of reproducing forests; forest nurseries, planting, thinning, harvesting; forest injuries and methods of prevention. Includes 12*a* and 12*b*. Three hours attendance. Five hours laboratory and field work. One hour library work. Three hours credit. Second semester.
Professor Phillips

12*a*. **National Forest Planting**—Methods of seed collecting, seed storing, nursery practice, and field planting. Six to eight lectures. Second semester.
Mr. Mast

12*b*. **Commercial Nursery Practice**—Methods employed in various parts of the United States and relation to private planting. Six to eight lectures. Second semester.
Mr. Mast

15. **Forest Mensuration**—Forest surveys and mapping. Methods of determining volume, age and increment of single trees and of stands. Three hours attendance. Five hours laboratory and field work. One hour library work. Three hours credit. First semester.
Adjunct Professor Sponsler

16. **Forest Mensuration**—15 continued. Second semester.
Adjunct Professor Sponsler

17. **Forest Policy**—Forestry methods in foreign countries and in the United States. State and national activity as to public and private holdings; taxation, benefits, fire laws, working forces, achievements. Includes 17*a*. Two hours attendance. Four hours preparation. Two hours credit. First semester.
Professor Phillips

17*a*. **State Forestry**—Special state problems; management of state reserves; marking timber, trespass, timber sales. Ten to fifteen lectures. Second semester.
Mr. Moody

19. **Forest Management and Valuation**—Preparation of working plans for private, state and national holdings; valuation of forest soils and forest growth; administration, regulation of forests, and forest finance. Three hours attendance. Six hours preparation. Three hours credit. First semester.
Professor Phillips, Adjunct Professor Sponsler

20. **Forest Management and Valuation**—19 continued. Second semester.

21. **Thesis**—Subject for thesis is to be selected upon recommendation of the head of the department. Consultation hours to be arranged. Six hours preparation. Two hours credit. First semester
Professor Phillips, Adjunct Professor Sponsler

22. **Thesis**—21 continued. Second semester.

23. **Silvicultural Problems**—A definite problem will be assigned to each student. A written report is required upon completion of the work. Consultation hours to be arranged. Six to twelve hours laboratory. Two to four hours credit. First semester.
Professor Phillips, Adjunct Professor Sponsler

24. **Silvicultural Problems**—23 continued. Second semester.

25. **Wood Structure Problems**—Special problems in wood structure will be assigned to students. Written reports are required. Consultation hours to be arranged. Six to twelve hours laboratory. Two to four hours credit. First semester. Adjunct Professor Sponsler, Professor Phillips

26. **Wood Structure Problems**—25 continued. Second semester.

29. **Seminar**—Special phases of forestry with detailed reports by students. Current literature in forestry, forest botany, lumbering. Two hours attendance. Two hours library work. No credit. First semester.
Professor Phillips, Adjunct Professor Sponsler

30. **Seminar**—29 continued. Second semester.

Botany 35. **Dendrology**—Brief review of the morphology and physiology of the tree. Forest regions, forest types, and forest trees of North America. Distribution. Economic importance. Detail study of dendrological and silvical characteristics of about one hundred important forest trees. Two hours attendance. Four hours laboratory and field work. Two hours credit. First semester. Adjunct Professor Sponsler

Botany 36. **Dendrology**—35 continued. Three hours attendance. Six hours laboratory and field work. Three hours credit. Second semester.

Botany 37. **The Study of Woods**—A study of the structure of the important woods leading to their identification and to the relation of structure to strength, weight, shrinkage, and other physical properties. Primarily for foresters. Engineers may elect this course for two hours credit after consultation with the instructor. Two hours attendance. Six hours laboratory. One hour reading. Three hours credit. First semester.
Adjunct Professor Sponsler

Civil Engineering 30. **Forest Survey**—Designed for students of forestry. Prerequisite: Civil Eng. 5, 5*a*. Field and map work. Three hours credit. Second semester. Professor Bridgman

Applied Mechanics 20. **Timber Physics**—Physical properties of timber. Primarily for forestry students. Prerequisite: Study of Woods (Botany 37). One hour attendance. Six hours laboratory. Three hours credit. Second semester. Professor Chatburn

Zoology 32. **Forest Zoology**—Life history and habits of animals, exclusive of insects, which affect the forest. Methods of control. Prerequisite: Zoology 1. Two hours attendance. Four hours laboratory and field work. Two hours credit. Professor Wolcott

Botany 25. **Forest Mycology**—Detailed study of the fungi which attack forest trees. Two hours attendance. Six hours laboratory and field work. Two hours credit. First semester. Assistant Professor Pool

Entomology 11. **Forest Entomology**—Insects of the forest. This course is intended for forestry students. Two hours lectures. Four hours laboratory. Second semester. Professor Bruner

American History 10. **Public Lands**—Disposal and settlement of public lands. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Associate Professor Persinger

SCHOOL OF AGRICULTURE COURSES

A. **Farm Forestry**—Relation of forest to agriculture. Wind-breaks, shelter-belts, and forest plantations. Methods of propagation, planting, and protection. Two hours attendance. Four hours library and field work. Two hours credit. Second semester.
Professor Phillips, Adjunct Professor Sponsler

B. **Farm Forestry**—An adaptation of course A for students in the short course of the School of Agriculture. Sixteen lectures.
Professor Phillips, Adjunct Professor Sponsler

## GEOGRAPHY AND ECONOMIC GEOLOGY

Professor Condra, Assistant Professor Loveland, Adjunct Professor Bengtson

The Agricultural subjects of this department are: Courses 1, 2, 4, 5, and 28. Course 1 considers the origin and description of land forms. Number 2 treats the structure, climate, topography, resources and industrial development of North America. It emphasizes the control of the various soil regions. Number 4, the geography and meteorology of the atmosphere, is especially designed to meet the need of agricultural students. Industrial Geography, Course 5, is planned for students who wish a detailed description of certain agricultural resources and industries. Course 28 gives only those geological facts which are of importance to students of this College.

1. **Physical Geography of the Land**—A practical course consisting of illustrated lectures, laboratory exercises and readings. Lecture topics: structure and relief features; maps and globes; origin of plains, plateaus and folds; wind erosion; dust and dunesand; sandhills and deserts; ground water; land slides, talus cones and slopes; rivers and the factors which influence them; development and classification of valleys; origin and classification of land forms produced by river erosion of plains, plateaus and folds; deltas, flood plains, fans and terraces; work of snow and ice; moraines, drumlins and till plains; topographic effects of earthquakes and volcanoes; lava plateaus. The course considers physiographic processes and

their resulting land forms together with some of the influences which these bear to life and industry. The laboratory subjects are: minerals and rocks; wet laboratory experiments; maps, folio, atlas, and model interpretations and studies. Two hours attendance. Four hours laboratory and preparation. Two hours credit. First semester.

Professor Condra, Adjunct Professor Bengtson

2. **North America**—The leading geographic conditions such as structure, topography, harbors and coast line, climate, and the natural resources are treated with considerable detail in their relation to the industrial, political, and social development of the topographic regions and countries. Most time is given to the United States and Mexico. Considerable attention is given to the geography of Nebraska and to the physiographic development of the natural gateways or routes which lead into and across the continent. Lectures fully illustrated. Laboratory studies based on topographic and physical maps, climatic charts, atlases, and models. Attendance two hours. Laboratory, library and preparation four hours. Two hours credit. Second semester. Professor Condra, Adjunct Professor Bengtson

4. **The Atmosphere**—A study of meteorology and geography of the atmosphere designed to meet the practical needs of students. Some of the topics considered are: The physical and chemical nature of the atmosphere; distribution of heat and atmospheric pressure; wind systems; humidity and rainfall; storms; hot winds; changes and fluctuations of climate; climatology in its relation to deserts, prairie land, forests, agriculture, and distribution of people. Students are taught the construction of weather maps and climatic charts; forecasting; and the use and care of meteorological instruments. Experiments of various kinds are performed in the wet laboratory. Two hours attendance. Four hours laboratory and preparation. Two hours credit. Second semester.

Assistant Professor Loveland, Adjunct Professor Bengtson

5. **Industrial Geography**—This course gives a review of the natural resources and their conservation, and a specific study of mineral fuels, iron and steel, water power, cotton, rice, the sugars, coffee and tea, wheat, corn. The instruction is made concrete by the use of well selected sets of lantern slides which show the leading processes and commercial movements of each industry. Commercial raw materials are shown by museum specimens and excursions are made to local industries. Two hours attendance. Four hours museum, library and preparation. Two hours credit. First semester.

Professor Condra, Adjunct Professor Bengtson

21. **Field Geology**—This course consists of excursions to outcropping formations, quarries, gravel pits and sand dredges along Salt Creek, Blue River and the Platte. It teaches methods of doing field work and how to use the aneroid barometer, level, transit, plane table, camera and drawing materials as employed on geological and soil surveys. Mapping and descriptions. Collateral readings. One or two hours credit. First and second semesters. Adjunct Professor Bengtson

22. **Field Geology**—21 continued. First and second semesters.

Professor Condra

28. **Agricultural Geology**—Leading geologic structures; soil forming, road and cement-making minerals and rocks; rock weathering; land erosion; ground water; rural water supplies; evolution of farm animals as shown by museum fossils; structure and soil regions of Nebraska; the agricultural importance of the "Red bed," "Pierre, Bad land, Loup Fork, glacial, loess, alluvial and dunesand formations." Two hours attendance. Four hours laboratory, field and preparation. Two hours credit. Second semester.
Professor Condra, Adjunct Professor Bengtson

## HORTICULTURE

Professor Emerson, Adjunct Professor Westgate, and Adjunct Professor Howard

### GENERAL INFORMATION

The laboratories in Horticultural Hall are provided with charts, models, and specimens illustrating various phases of horticulture. They accommodate thirty students at a time. Greenhouse room is available for the plants used in experimental work. A small nursery in the horticultural grounds furnishes much of the material used in the laboratory and at the same time illustrates practical methods of propagating various plants. The orchards, vineyards and small fruit gardens of the Experiment Station afford practice work in pruning and training fruits and present the opportunity for comparison of various cultural methods. The farm campus and newly established arboretum furnish very good material for the study of landscape gardening. A limited number of advanced students who desire to fit themselves as teachers or investigators will be employed at a moderate compensation to assist in the laboratory of the School of Agriculture during the winter or to help in the experimental work of the Experiment Station during the summer. The investigations now being conducted by the department on the subject of heredity afford especially favorable opportunities to graduate students.

Botany 1 and 2 should precede all college courses in horticulture and must precede courses 7 and 8. All college courses are open to women as well as to men, but course 6 is especially recommended to women. Courses 5, 9 and 10 are open only to students specializing in horticulture. Students taking course 9 or 10 will ordinarily find it necessary to be at the Experiment Station during the summer.

### PRIMARILY FOR UNDERGRADUATES

1. **Plant Propagation**—The multiplication of plants by means of seeds, bulbs, tubers, layers, cuttings, grafts, etc. Growing, packing, storing, and shipping nursery stock. Two hours attendance. Three hours laboratory. Two hours library. Two hours preparation. Three hours credit. First semester. Adjunct Professor Westgate

2. **Orcharding**—A detailed consideration of orchard management. The tree fruits grown in Nebraska are studied according to the following scheme: Selection of varieties, choice of site, preparation of the land, planting,

cultivation, covercrops, fertilizers, wind-breaks, pruning, spraying, protection from frost, harvesting, packing, storing, marketing; renovating old orchards. Three hours attendance. Two hours laboratory. Two hours library. Two hours preparation. Three hours credit. Second semester.

Adjunct Professor Howard

3. **Apple Judging**—A study of fall and winter varieties of apples adapted to Nebraska. Practice in judging with and without score cards, identifying and describing varieties, preparing exhibits, packing and storing, etc. One hour attendance. Four hours laboratory. One hour library. Two hours credit. First semester. Adjunct Professor Howard

4. **Fruit and Vegetable Gardening**—Small fruits adapted to Nebraska are considered according to the scheme outlined for tree fruits in course 2. A part of the time will be devoted to a consideration of the more important garden vegetables. Three hours attendance. Two hours laboratory. Two hours library. Two hours preparation. Three hours credit. Second semester. Adjunct Professor Howard

5. **Floriculture**—The production of flowers both indoors and outdoors for home use and for market. Particular attention will be given to the construction and management of greenhouses. Two hours attendance. Four hours laboratory. Two hours library. One hour preparation. Three hours credit. First semester. Adjunct Professor Westgate

6. **Ornamental Gardening**—A consideration of the principles of landscape gardening with practice in landscape designing. A study of ornamental trees, shrubs and other plants adapted to planting in Nebraska; their classification, culture, and decorative value. Two hours attendance. Two or four hours laboratory. One hour or two hours library. One hour preparation. Two or three hours credit. Second semester.

Adjunct Professor Westgate

FOR UNDERGRADUATES OR GRADUATES

7. **Principles of Plant Breeding**—An elementary study of the principles underlying plant improvement, including simple discussions of the following: How plant characters arise and disappear, sports or mutations, bud variation. How characters are inherited, alternate versus blended inheritance. Mendelian and non-Mendelian inheritance. Appearance and inheritance of latent characters. Reversion. Correlation of characters in inheritance. Degree of development of characters, or fluctuation due to environment. Adaptation. Statistical study of fluctuations. Inheritance of fluctuations. Effect of selection in modifying the type of self- and open-pollinated plants. Pure lines. Mass selection versus isolation of biotypes. Pedigree breeding. Hybridization as a means of combining desirable parent characters. Inbreeding. Students will study and classify variations in wild and cultivated plants, prepare a herbarium of variations, practice hybridizing plants, and study hybrid material in the greenhouse and laboratory. Two hours attendance. Two hours laboratory. One hour library. One hour preparation. Two hours credit. First semester.

Professor Emerson

8. **Genetics**—Current theories of variation and heredity; their bearing upon plant breeding. A critical study of the published results of recent investigations. Assigned readings and consultation. Six or nine hours library. Two or three hours credit. Second semester.

Professor Emerson

9. **Horticultural Problems**—The study of assigned problems in plant breeding or in the production of horticultural crops. In the main only problems closely related to the investigations being conducted in the Experiment Station will be assigned. Laboratory or field work with assigned readings, consultation, and the preparation of a satisfactury thesis. Five to twelve hours laboratory. One to three hours library. Two to five hours credit. First and second semesters. Professor Emerson

10. **Horticultural Problems**—Continuation of 1. First and second semesters.

SCHOOL OF AGRICULTURE COURSES

Courses A and B are for first-year men, courses C and D for second-year women, courses E and F for regular fourth-year men and irregular third-year men.

A. **Orcharding**—The management of both home and commercial orchards, including the propagation, culture, harvesting, storing, and marketing of such tree fruits as apple, pear, cherry, plum, and peach. Three hours attendance. Two hours laboratory. First semester.

Adjunct Professor Westgate

B. **Small Fruits**—A study of such fruits as the strawberry, blackberry, raspberry, gooseberry, currant, and grape. Each fruit is studied with reference to soil, cultivation, propagation, pruning, varieties, harvesting, marketing, etc. Two hours attendance. Two hours laboratory. Second semester.

Adjunct Professor Westgate

C. **Home Horticulture**—The home orchard and garden. The principles of ornamental gardening as applied to the home. Two hours attendance. Two hours laboratory. First semester. Adjunct Professor Westgate

D. **Home Horticulture**—Continuation of C. Second semester.

E. **Ornamental Gardening**—The general principles of ornamental gardening; methods and plans for ornamenting the farm home, city lot, etc. Two hours attendance. Two hours laboratory. First semester.

Adjunct Professor Westgate

F. **Vegetable Gardening**—General cultural requirements of our common vegetable crops. Two hours attendance. Two hours laboratory. Second semester. Adjunct Professor Westgate

## HOME ECONOMICS

Professor Bouton, Associate Professor Folger, Miss Denny, Miss Harper, Miss Nesbitt, Miss Hedges

### GENERAL INFORMATION

The purpose of the department of Home Economics is to give instruction in branches which have to do with the welfare of the home. Training is provided in domestic science and art, and in household administration. Under these general divisions are studied: food, textiles and clothing; the house, its furnishing and the management of the work done therein. All these branches are considered in their relation to the family and the individual, with special emphasis on those phases which have to do with the health and comfort of the individual. Special attention is given to artistic, economic and sociological questions which form a legitimate part of the work.

Instruction is given by the lecture laboratory method.

For a major in Home Economics the following courses are required: 1, 2, 3, 4, 5, 6, 9, 10, 13 and 14; for a minor, courses 1, 2, 3, 4, 5 and 6. The use of these courses as a major is conditional on the completion of Chemistry 1, 2, 3 and 14.

### THE UNIVERSITY TEACHERS' CERTIFICATE IN HOME ECONOMICS

See statement under "Requirements for Graduation," page 16.

### PRIMARILY FOR UNDERGRADUATES

1. **Sewing and Design**—Drafting, cutting and making of garments. Textiles, their manufacture, qualities and value. Home decoration, color, design, material, etc. Two hours atendance. Six hours laboratory. One hour outside preparation. Three hours credit. First semester.

Professor Bouton, Miss Denny

2. **Sewing and Design**—1 continued. Second semester.

3. **Foods: Selection and Preparation**—Composition and function of typical foods; fundamental principles and processes of cooking and their application in the preparation of individual dishes; nutritive and money values. Should be preceded by Chemistry 1 and 2. Three hours attendance. Six hours laboratory. Three hours credit. First semester.

Associate Professor Folger, Miss Nesbitt

4. **Foods: Selection and Preparation**—3 continued. Second semester.

11. **General Cookery**—For juniors and seniors who desire some work in cookery, but have not the time for Courses 3, 4, 5 and 6. General principles and methods of cooking; lessons in serving. Two hours attendance. Four hours laboratory. Two hours credit. First semester.

Associate Professor Folger, Miss Harper

12. **General Cookery**—11 continued. Second semester.

15. **Elementary Cookery**—For students who have no preparation in chemistry. One hour attendance. Three hours laboratory. Two hours outside preparation. Two hours credit. First semester.
Associate Professor Folger, Miss Nesbitt

15*a*. **Similar to 15**—Given on Saturday morning for public school teachers. Three hours laboratory. One hour credit. First semester.
Associate Professor Folger, Miss Nesbitt

16. **Elementary Cookery**—15 continued. Second semtser.

16*a*. Similar to 15—15*a* continued. Second semester.

FOR UNDERGRADUATES AND GRADUATES

5. **Advanced Cookery**—Application of scientific principles to more elaborate dishes and to menus. Preservation of foods; serving of meals. Two hours attendance. Six hours laboratory. Two hours credit. First semester.
Associate Professor Folger, Miss Nesbitt

6. **Advanced Cookery**—5 continued. Second semester.

5*a*. **Dietetics**—To be taken with course 5. Consideration of problems of digestion and metabolism. Study of dietaries of given cost and their adaptation to varying conditions of health, age, environment, etc. Diet of children; family dietaries; diet of invalids. One hour attendance with assigned readings. One hour credit. First semester. Associate Professor Folger

6*a*. **Dietetics**—5*a* continued. Institutional and special dietaries. Second semester.

[7. **Industrial Art**—Home decoration and advanced sewing; principles of design in dress and in house furnishing. Two hours attendance. Six hours laboratory. One hour outside preparation. Three hours credit. First semester. Miss Denny]

8. **Industrial Art**—7 continued. Second semester.

9. **Household Administration**—House plans and furnishings; ventilation, heating, lighting, water supply, lisposal of waste; management of household affairs, division of income, domestic service, and home nursing; house practice, including all processes of practical housekeeping. Two hours attendance. Two hours laboratory. Two or five hours outside preparation. Two or three hours credit. First semester. Professor Bouton

10. **Household Administration**—9 continued. Second semester.

13. **Teachers' Course**—Required of candidates for the University Teachers' Certificate in Home Economics. Lectures with practice work in Teaching. Two hours attendance. Four hours outside preparation, including practice teaching. Two hours credit. First semester.
Professor Bouton, Associate Professor Folger

14. **Teachers' Course**—13 continued. Second semester.

17. **Wood Work and Interior Finish**—(See Agricultural Engineering 5.)

18. **Wood Work and Interior Finish**—17 continued. Second semester.

SCHOOL OF AGRICULTURE COURSES

A. **Sewing and Design**—Hand and machine sewing, making of garments, study of form and color as applied in house furnishing; practice in house work. Three hours attendance. Six hours laboratory. Three hours credit. First semester. Professor Bouton, Miss Hedges

B. **Sewing and Design, House Practice**—A continued. Second semester.

C. **Elementary Cookery**—Composition and preparation of food with a study of its relation to healthful living; house practice. Three hours attendance. Six hours laboratory. Three hours credit. First semester. Miss Harper and Assistant

D. **Elementary Cookery, House Practice**—C continued. Second semester.

E. **Advanced Cookery**—Preparation and serving of meals; food for the sick; house practice. Three hours attendance. Six hours laboratory. Three hours credit. First semester. Miss Harper and Assistant

F. **Advanced Sewing**—Drafting, cutting and making of garments, including shirt waist suit; application of design in stenciling; house practice continued. Three hours attendance. Six hours laboratory. Three hours credit. Second semester. Miss Denny and Assistant

C. **Household Management**—House planning and furnishing; home sanitation; domestic service and finance. One hour attendance. Three hours laboratory. Two hours outside preparation. Two hours credit. First semester. Professor Bouton and Assistant

H. **Dressmaking**—The designing and making of dresses. One hour attendance. Two hours outside preparation. Two hours laboratory. Two hours credit. Second semester. Miss Denny

## MILITARY SCIENCE AND TACTICS

[See College of Arts and Sciences]

## PHYSICAL EDUCATION

[See College of Arts and Sciences]

Levy 1 mill on assessment @ 1/3 value
money 1 mill on 1/3 = $1400 ann.
Of joint buildings from this fund one
moiety levied from special effyn. - Ind
1/2 - $100 ann.

Assessed value Ld $429 ccm ann.
Increase in Eq. 35% over a single Eff
for Eq. 6th cent.

Eff. pmt. Sch 24 ccm Maint 2500
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Total etc $101620

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Total 62720

Coll Sch. Sch 4P115, Maint 28736
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Total $14762 Gen state
road Jurisdict.
Maint Eff 181403 mt
rec of roads, light, Coff
& prisons.

# The United States Agricultural Experiment Station for Nebraska

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## GOVERNING BOARD OF THE EXPERIMENT STATION

(The University Board of Regents)

### Officers

Hon. Charles Sumner Allen, President
James Stuart Dales, Secretary

HON. CHARLES SUMNER ALLEN.....Lincoln
HON. WILLIAM GUNN WHITMORE.....Valley
HON. VICTOR GERALD LYFORD.....Falls City
HON. CHARLES BARNEY ANDERSON.....Crete
HON. GEORGE COUPLAND .....Elgin
HON. FRANK LOUIS HALLER.....Omaha

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## OFFICERS OF THE EXPERIMENT STATION

EDGAR ALBERT BURNETT, B. Sc., Director.
JAMES STUART DALES, M. Ph., Financial Secretary.*
WILLIAM WARNER MARSHALL, Executive Clerk

## THE WORKING STAFF

EDWIN MEAD WILCOX, Ph. D., Agricultural Botany.
FREDERICK JAMES ALWAY, Ph. D., Agricultural Chemistry.
LEON WILSON CHASE, B. Sc. in M. E., Agricultural Engineering.
CHARLES W. PUGSLEY, B. Sc., Agronomy and Farm Management (Soils).
HOWARD REMUS SMITH, B. Sc., Animal Husbandry.
JAMES HARRISON GAIN, M. D. C., Animal Pathology.
ARCHIBALD LOUIS HAECKER, B. Sc. A., Dairy Husbandry.
LAWRENCE BRUNER, B. Sc., Entomology.
EDWARD GERRARD MONTGOMERY, A. M., Experimental Agronomy.
FRANK J. PHILLIPS, A. B., B. Sc., M. S. F., Forestry.
ERWIN HINCKLEY BARBOUR, Ph. D., Geology.

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* By an act of the Legislature of the state of Nebraska, approved and in effect February 5, 1899, the state treasurer became *ex officio* custodian of the experiment station fund on and after July 1, 1899.

GEORGE RICHARD CHATBURN, A. M., Highway Engineering.

ROLLINS ADAMS EMERSON, B. Sc., Horticulture.

OSCAR VAN PELT STOUT, C. E., Irrigation Engineering.

GEORGE ANDREW LOVELAND, B. S., LL. B., Meteorology.

WILLIAM PATTON SNYDER, M. S., Superintendent Experimental Substation, North Platte.

G. HERBERT COONS, A. B., Assistant in Agricultural Botany.

VENUS WORRELL POOL, A. M., Assistant in Agricultural Botany.

ROBERT SAMUEL TRUMBULL, A. M., Assistant in Agricultural Chemistry.

PERCY BONSFIELD BARKER, A. B., Assistant in Soils.

THEODORE ALEXANDER KIESSELBACH, B. Sc., A. B., Assistant in Crop Agronomy.

LAZELLE BRANTLEY STURDEVANT, A. M., Assistant in Animal Pathology.

MYRON HARMON SWENK, A. M., Assistant in Entomology.

ROBERT FRANCIS HOWARD, B. S. in Agr., Assistant in Horticulture.

WILLIAM WESLEY BURR, B. Sc., Assistant in Soils and Crops, North Platte; Assistant Agriculturalist, Office Dry Land Agriculture, U. S. Department of Agriculture.

JAMES COWAN, Superintendent Experimental Substation, Valentine.

*FRITZ KNORR, B. Sc., Superintendent Experimental Substation, Mitchell.

SENATOR WILLIS PERIN, Farm Superintendent.

ERWIN HOPT, B. Sc., Assistant in Agronomy (Crops).

*LOUISE M. ALLEN, A. M., Scientific Assistant, Seed Testing.

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* Detailed by the United States Department of Agriculture.

## THE CENTRAL EXPERIMENT STATION

The Nebraska Agricultural Experiment Station, carried as a department of the College of Agriculture of the University of Nebraska, is maintained from funds appropriated by Congress, supplemented by state appropriations. Under the provisions of the Hatch Bill, each state and territory that had established an agricultural college under the land grant act of 1862 was offered funds to establish, in connection therewith, an agricultural experiment station. Nebraska assented to the conditions and was one of the states to receive immediate benefits from the act.

The work contemplated by the law providing for these experiment stations is set forth as follows in section 2 of the act establishing the station:

SECTION 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under the varying series of crops; the capacity of new trees or plants for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.

On March 16, 1906, an act known as the Adams act became effective, granting increased support to the Experiment Station for purely technical investigations along the lines mentioned in the Hatch act under which the Experiment Station was established, and since the acceptance of this fund the Experiment Station has been conducting these technical lines of investigation in accordance with the act.

The central experiment station is located at the University Farm, except the Finance Office, which is located at the University campus. The farm comprises a tract of 320 acres located three miles east of the University, having street car connections. About one hundred acres is now laid off in experiment plats for field crops, fruits, and vegetables. The animals used for experiment are in a measure furnished from the herds of cattle, sheep and hogs used for instructional purposes. The offices of the Director and

of the departments of Animal Husbandry and Agricultural Botany, the laboratories for investigation in Agricultural Botany and the Agricultural Library, are in Agricultural Hall. The offices of the departments of Experimental Agronomy and of Instructional Agronomy and Farm Management, also of Agricultural Chemistry and Entomology, and the laboratories for investigation in these lines are in Experiment Station Hall. The Departments of Horticulture, Dairy Husbandry and Animal Pathology have separate buildings.

## THE EXPERIMENTAL SUBSTATIONS

**North Platte Substation.** The Experimental Substation provided for by the Legislature of 1903 is located in Lincoln County, three miles south of North Platte, on a tract of 1,920 acres. This farm contains 270 acres of bench land with an elevation of about 2,800 feet. About 140 acres of this farm is level table-land with an elevation of 3,000 feet, the balance of the farm being rough canyon and table-land devoted to pasture. The experiments in crop and animal production upon this farm are comparable with nearly all the crop production and animal industry of central Nebraska. Experiments in crop production are conducted entirely without irrigation.

**Valentine Substation.** The Legislature of 1909 provided for an additional substation west of the second guide meridian and north of the sixth standard parallel, also a substation in cooperation with the U. S. Department of Agriculture west of the 102d meridian where experiments should be conducted both with and without irrigation. The first of these substations has been located at Valentine, Nebraska, upon a portion of the military reservation adjoining the town to the southeast upon which a permanent lease has been given to the regents of the University so long as the land is used for experimental purposes. This site is section 32 and the west half of section 33 and that part of the southeast quarter of section 33 lying northwest of the Niobrara River, all in township 34 north, range 27 west, in Cherry County, Nebraska.

**Scottsbluff Substation.** The second substation to be operated in cooperation with the U. S. Department of Agriculture and known as the Scottsbluff station is located on the southeast quarter of section 21, township 23 north, range 57 west. This station is being put in condition for experimental work with the end in view that something may be accomplished the first year.

## EXPERIMENT STATION BULLETINS

Each year the station publishes at least four bulletins. These contain results of investigations in subjects pertaining to farming. They are sent free to anyone who requests them. The edition of each bulletin is 20,000 or more copies. An annual report, 5,000 copies, is published containing a summary of the work of the year and experimental results of interest to investigators. The publications of the station issued since those reported in the last calendar are the following:

Bulletin No. 111. Changes in the Composition of the Loess Soils of Nebraska Caused by Cultivation. By F. J. Alway. Distributed December 5, 1909; 25,000 copies.

Bulletin No. 112. Experiments with Corn. By E. G. Montgomery. Distributed December 15, 1909; 25,000 copies.

Bulletin No. 113. Oats. By E. G. Montgomery. Distributed February, 1910; 25,000 copies.

Bulletin No. 114. Storing Moisture in the Soil. By W. W. Burr. In press.

Press Bulletin No. 31. Production of Hog Cholera Serum. By J. H. Gain. Distributed December 15, 1909; 20,000 copies.

Twenty-third Annual Report. Presented to the Governor February 1, 1910.

The Experiment Station desires to assist the farmers of the state in solving many of the difficult and perplexing problems that affect our agricultural production and to this end is carrying on investigations along lines that aid the practical farmer. The co-operation of all who are interested in the improvement of agricultural practice is invited.

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Series XV Number 2

# Bulletin of The University of Nebraska

THE

LIBRARY OF THE UNIVERSITY OF ILLINOIS

# SCHOOL OF AGRICULTURE

## THE FOUR YEARS COURSE

## 1910-1911

Published by the University January 15, 1910
LINCOLN, NEBRASKA

The Bulletin of The University of Nebraska is published semi-monthly between January 1 and October 1 of each year by The University of Nebraska at The University of Nebraska.

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## COLLEGES AND SCHOOLS OF THE UNIVERSITY

The University of Nebraska comprises the following colleges and schools:

The Graduate College
The College of Arts and Sciences
The Teachers College
The College of Engineering
The College of Agriculture and the School of Agriculture
The College of Law
The College of Medicine and the School of Pharmacy
The School of Fine Arts
The Affiliated School of Music

The United States Agricultural Station for Nebraska, the Experimental Sub-Stations at North Platte, Valentine, and Scottsbluff, and the Farmers' Institutes are under the supervision of the Board of Regents of the University. The Lincoln Dental College has a contract with the University under which the sciences necessary for the degree in dentistry are taught at and by the University.

For separate catalogs or information regarding any of the above colleges or schools, address

THE REGISTRAR,
The University of Nebraska,
Lincoln, Nebraska.

## THE UNIVERSITY YEAR*

The regular session of the University embraces thirty-nine weeks, beginning the third Tuesday of September, and is divided into a first and a second semester. A summer session of eight weeks immediately follows the close of the second semester. Instruction is offered from September to August.

†First semester, 1910–1911, September 20 to February 3.
†Second semester, 1910–1911, January 30 to June 15.
Summer session, June 17 to August 12, 1910.

Registration in the summer session differs in fees and conditions from that in the regular semestral sessions. To enter any session, one must be able either to present the minimum admission requirements to the University or to meet the conditions for "Adult Special" registration.

*For 4-year course in School of Agriculture, see following pages.
†Final examinations for the first semester, entrance examinations and registration for the second semester are held during the same week.

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## SCHOOL OF AGRICULTURE CALENDAR

1910

**October 31,** Monday, First semester begins
**November 24,** Thursday, Thanksgiving holiday
**December 22,** Thursday, Christmas vacation begins

1911

**January 3,** Tuesday, 8 a. m., Christmas vacation ends
**February 4,** First semester ends
**February 6,** Monday, Second semester begins
**April 21,** Friday, Second semester ends

## OFFICERS OF ADMINISTRATION AND INSTRUCTION

SAMUEL AVERY, Ph. D., Chancellor of the University
JAMES STUART DALES, M. Ph., Treasurer of the University
PHILIP JOHN HARRISON, A. B., Registrar of the University
EDGAR ALBERT BURNETT, B. Sc., Dean of the College of Agriculture

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ALBERT EUGENE DAVISSON, A. B., Principal of the School of Agriculture and Head Professor of Agricultural Education
LAWRENCE BRUNER, B. Sc., Head Professor of Entomology
HOWARD REMUS SMITH, B. Sc., Head Professor of Animal Husbandry
ARCHIBALD LOUIS HAECKER, B. Sc., A., Head Professor of Dairy Husbandry
FREDERICK JAMES ALWAY, Ph. D., Head Professor of Agricultural Chemistry
ROLLINS ADAMS EMERSON, B. Sc., Professor of Horticulture
ROSA BOUTON, A. M., Professor of Home Economics
EDWIN MEAD WILCOX, Ph. D., Professor of Agricultural Botany
LEON WILSON CHASE, B. Sc., Professor of Agricultural Engineering
JAMES HARRISON GAIN, M. D. C., Professor of Animal Pathology
CHARLES WILLIAM PUGSLEY, B. Sc., Professor of Agronomy and Farm Management
LAZELLE BRANTLEY STURDEVANT, A. M., Assistant Professor of Animal Pathology
JULIA EMMELINE LOUGHRIDGE, A. B., Assistant Principal and Adjunct Professor of Mathematics
ELLIS RAIL, B. S. A., Assistant Professor of Animal Husbandry
MYRON HARMON SWENK, M. A., Assistant Professor of Entomology
VERNON VILAS WESTGATE, B. S., Adjunct Professor of Horticulture
PERCY BOUSFIELD BARKER, A. B., Adjunct Professor of Soils
ERWIN HOPT, B. Sc., Adjunct Professor of Agronomy and Farm Management
FLORA BULLOCK, A. M., Adjunct Professor of English
ROBERT SAMUEL TRUMBULL, A. M., Adjunct Professor of Agricultural Chemistry
*ROBERT CHILDERS ASHBY, B. S., Adjunct Professor of Animal Husbandry
ROBERT FRANCIS HOWARD, B. Sc., Adjunct Professor in Horticulture
WILLIAM LUTHER FRENCH, B. Sc., Adjunct Professor of Dairy Husbandry
GEORGE HERBERT COONS, A. B., Adjunct Professor of Agricultural Botany
CLAUDIUS KEDZIE SHEDD, B. Sc., Adjunct Professor in Agricultural Engineering
MARY VIRGINIA ZIMMER, A. B., Instructor in Mathematics and Physics
ALVIN ALDUS BAER, Assistant in Charge of Wood Work
GLAIDETH GAINEVERE DENNY, A. B., Assistant in History and German
GRACE GOLDENA DENNY, A. B., Instructor in Home Economics
ELLA BRADFORD HARPER, A. B., Instructor in Home Economics
MRS. VADA CLEGG VENNUM, Assistant Registrar
EDNA CLARA NOBLE, B. L., Librarian
OSCAR WARNER SJOGREN, Instructor in Forge Work
MINNIE MAY NEWMAN, Assistant in English
GEORGE CROCKER, Assistant in English and Mathematics

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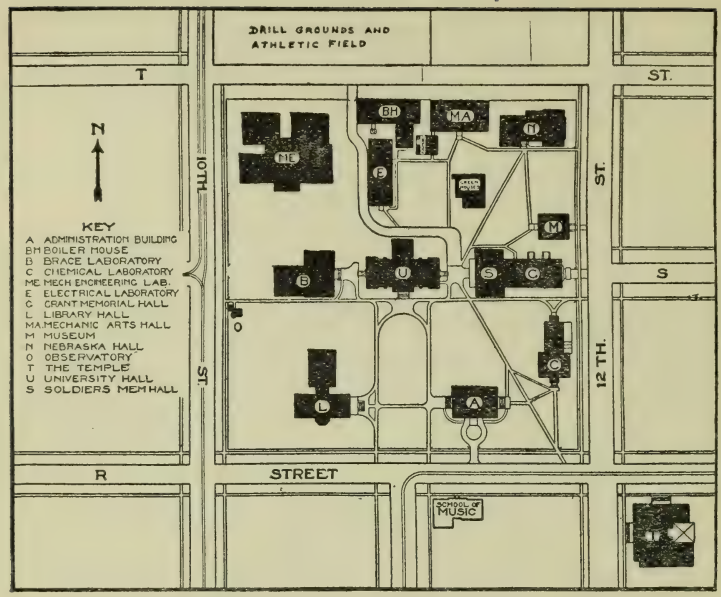
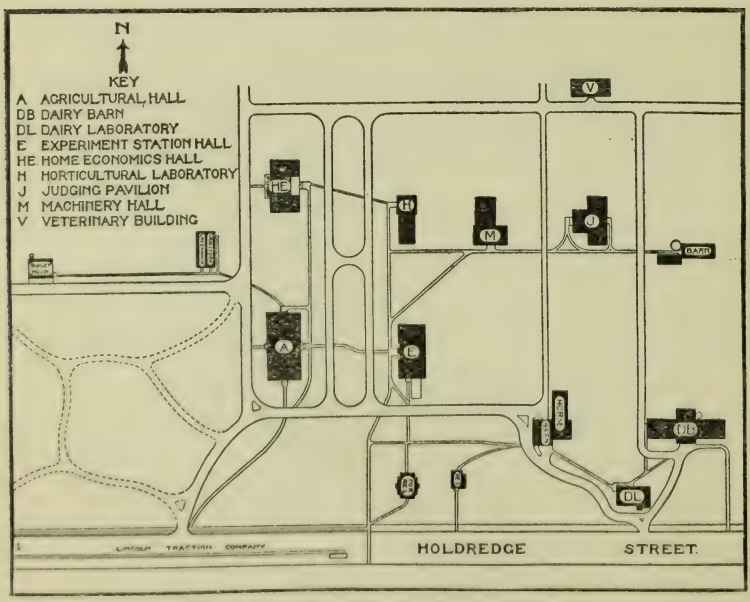
*Resigned




The University Campus in the City




The University Campus at the Farm

## GENERAL INFORMATION

**The Four Years Course.** The School of Agriculture is designed to train men and women for usefulness on the farm. To men it gives a full training in subjects pertaining to agriculture as well as in those subjects in general education a knowledge of which every one should possess. The training offered to women is of a character to fit them for the duties and responsibilities of farm homes. Men who complete the course are admitted to the technical agricultural group in the University without examination; women have the same privilege if they wish to enter the group of home economics.

**Requirements for Admission.** The School is open to men and women of sixteen years of age or over who have completed the common school course of study. All applicants for admission who present certificates from schools accredited to the School of Agriculture or from the superintendent of a county whose schools are accredited to the University are admitted without examination.

**The School Year** is divided into two semesters of twelve weeks each. The first semester opens October 31, 1910, and closes February 4, 1911. The second semester opens February 6, 1911, and closes April 21, 1911.

**Fees.** The following fees are required of students in the School of Agriculture:

| | |
|---|---|
| Matriculation (payable only on first registration) | $5.00 |
| Incidental, each year | 4.00 |
| Chemistry, each year (to cover cost of material used) | 3.00 |
| Shop—Wood Work, each year | 2.00 |
| Shop—Forge Work, each year | 2.00 |
| Home Economics—Cookery, each year (to cover cost of laboratory materials used) | 2.00 |
| Home Economics—Sewing, each year (as above) | 2.00 |
| Home Economics, each year | 2.00 |
| Students who take two years of Home Economics work in one year are required to pay a fee of | 4.00 |

**Board and Room.** Board and room for men can be had in East Lincoln at reasonable rates; students will be assisted by

responsible persons in finding suitable lodging places. Women are furnished board and lodging in Home Economics hall at $20 a month.

**Holidays.** The School of Agriculture observes Thanksgiving day (one day only) as a holiday. The Christmas vacation begins Thursday, December 22, and lasts until Tuesday, January 3. Easter recess is not observed.

**College Courses.** Regular college courses are offered by the departments of Agricultural Chemistry, Animal Husbandry, Dairy Husbandry, Field Crops, Horticulture and Soils.

**Street Car Service.** There are direct and commodious street car connections between the University campus and the University farm.

**For further information** address the Principal of the School of Agriculture, University of Nebraska, Lincoln.

## COURSE OF STUDY FOR MEN

### FIRST YEAR

#### FIRST SEMESTER

| | Class Hours | Practice Periods |
|---|---|---|
| Algebra | 4 | |
| Civics and History | 2 | |
| English | 4 | |
| Horticulture | 3 | 1 |
| Dairy Husbandry | 2 | 2 |
| Breeds | 2 | |
| Judging Cattle, Horses, Sheep, and Swine | | 2 |
| Grain Judging | | 2 |
| Wood Work | | 2 |
| Military Drill | | |
| | 17 | 9 |

#### SECOND SEMESTER

| | | |
|---|---|---|
| Algebra | 4 | |
| Civics and History | 2 | |
| English | 3 | |
| Horticulture | 2 | 1 |
| Forestry | 2 | |
| Dairy Husbandry | 2 | 2 |
| Breeds | 2 | |
| Judging Cattle, Horses, Sheep, and Swine | | 2 |
| Grain Judging | | 2 |
| Wood Work | | 2 |
| Military Drill | | |
| | 17 | 9 |

## SECOND YEAR

### FIRST SEMESTER

| | Class Hours | Practice Periods |
|---|---|---|
| Algebra | 4 | |
| English | 3 | |
| Chemistry | 3 | 2 |
| Field Crops | 3 | 1 |
| American History | 4 | |
| Botany | 1 | 2 |
| Forge Work | | 2 |
| Military Drill | | |
| | 18 | 7 |

### SECOND SEMESTER

| | | |
|---|---|---|
| Physics | 3 | 1 |
| English | 3 | |
| Chemistry | 3 | 2 |
| Field Crops | 3 | |
| Feeding Live Stock | 5 | |
| Botany | 1 | 2 |
| Forge Work | | 2 |
| Military Drill | | |
| | 18 | 7 |

## THIRD YEAR

### FIRST SEMESTER

| | | |
|---|---|---|
| Physics | 3 | 1 |
| Farm Management | 2 | |
| English | 2 | |
| Geometry | 2 | |
| Principles of Breeding | 2 | |
| Soils | 2 | 1 |
| Anatomy and Physiology of Farm Animals | 3 | |
| Farm Machinery | | 2 |
| Judging Cattle, Sheep, and Swine | | 1 |
| Entomology | 2 | 1 |
| Military Drill | | |
| | 18 | 6 |

SECOND SEMESTER

| | Class Hours | Practice Periods |
|---|---|---|
| Farm Management | 2 | |
| English | 3 | |
| Geometry | 3 | |
| Principles of Breeding | 2 | |
| Soils | 2 | 1 |
| Anatomy and Physiology of Farm Animals | 3 | |
| Farm Machinery | | 2 |
| Judging Cattle, Sheep, and Swine | | 1 |
| Entomology | 2 | 1 |
| Military Drill | | |
| | 17 | 5 |

## FOURTH YEAR

FIRST SEMESTER

| | | |
|---|---|---|
| Botany | 2 | 1 |
| Horticulture | 2 | 1 |
| English | 4 | |
| Mathematics | 4 | |
| Economics | 3 | |
| German (Optional with any 5 hours of Ag. Subjects) | | |
| Rural Architecture | | 2 |
| Diseases of Farm Animals | 3 | |
| Military Drill | | |
| | 18 | 4 |

SECOND SEMESTER

| | | |
|---|---|---|
| Botany | 2 | 1 |
| Horticulture | 2 | 1 |
| English | 4 | |
| Mathematics | 4 | |
| Economics | 3 | |
| German (Optional with any 5 hours of Ag. Subjects) | | |
| Rural Architecture | | 2 |
| Diseases of Farm Animals | 3 | |
| Military Drill | | |
| | 18 | 4 |

## COURSE OF STUDY FOR WOMEN

### FIRST YEAR

FIRST SEMESTER

| | Class Hours | Practice Periods |
|---|---|---|
| Sewing and House Practice | 3 | 3 |
| Wood Work | 1 | 1 |
| English | 4 | |
| Algebra | 4 | |
| Civics and History | 2 | |
| Chemistry | 3 | 2 |
| Physical Training | Three periods per week | |
| | 17 | 6 |

SECOND SEMESTER

| | | |
|---|---|---|
| Sewing and House Practice | 3 | 3 |
| Wood Work | 1 | 1 |
| English | 4 | |
| Algebra | 4 | |
| Civics and History | 2 | |
| Chemistry | 3 | 2 |
| Physical Training | Three periods per week | |
| | 17 | 6 |

### SECOND YEAR

FIRST SEMESTER

| | | |
|---|---|---|
| Cooking and House Practice | 3 | 3 |
| English | 3 | |
| Algebra | 3 | |
| Dairy | 2 | 1 |
| Horticulture | 2 | 1 |
| Physics | 3 | 1 |
| Physical Training | Three periods per week | |
| | 16 | 6 |

SECOND SEMESTER

| | Class Hours | Practice Periods |
|---|---|---|
| Cooking and House Practice | 3 | 3 |
| English | 3 | |
| Algebra | 3 | |
| Dairy | 2 | 1 |
| Horticulture | 2 | 1 |
| Physics | 3 | 1 |
| Physical Training | Three periods per week | |
| | 16 | 6 |

## THIRD YEAR

FIRST SEMESTER

| | | |
|---|---|---|
| Sewing and House Practice | 3 | 3 |
| English | 4 | |
| American History | 2 | |
| Geometry | 2 | |
| Physiology and Hygiene | 3 | 1 |
| Entomology | 2 | 1 |
| Physical Training | Three periods per week | |
| | 16 | 5 |

SECOND SEMESTER

| | | |
|---|---|---|
| Cookery | 3 | 3 |
| English | 4 | |
| American History | 2 | |
| Geometry | 2 | |
| Physiology and Hygiene | 3 | 1 |
| Entomology | 2 | 1 |
| Physical Training | Three periods per week | |
| | 16 | 5 |

## FOURTH YEAR

### FIRST SEMESTER

| | Class Hours | Practice Periods |
|---|---|---|
| House Planning and Furnishing | | 2 |
| English | 4 | |
| Geometry | 4 | |
| Political Economy | 3 | |
| Botany | 1 | 2 |
| German | 5 | |
| | 17 | 4 |

### SECOND SEMESTER

| | | |
|---|---|---|
| Dressmaking | | 2 |
| English | 4 | |
| Geometry | 4 | |
| Political Economy | 3 | |
| Botany | 1 | 2 |
| German | 5 | |
| | 17 | 4 |

## DEPARTMENTS OF INSTRUCTION

### AGRICULTURAL BOTANY

Instruction in this department is given during the second and third years of the course. The aim is to make the instruction valuable alike to those who contemplate entering one of the four year courses in the College of Agriculture and to those who expect to return to the farm. Considerable emphasis is to be placed upon the economic phases of the subject and yet this feature is not permitted to interfere with the proper presentation of the science of botany. The laboratory is equipped with microscopes and other necessary apparatus. Recently a portion of the greenhouse has been especially arranged and equipped for the experimental work in plant physiology. Important additions have also been made to our charts and literature available for the use of students.

**A. Elementary Agricultural Botany**—A general introduction to the science of botany. Students will become acquainted with the general morphology of the flowering plants. Accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. One hour lecture. Four hours laboratory. Three hours credit. First semester.

Professor Wilcox, Adjunct Professor Coons.

**B. Elementary Agricultural Botany**—Elementary study of types of plants selected as far as possible with reference to their economic value in agriculture. One hour lecture. Four hours laboratory. Three hours credit. Second semester.

Professor Wilcox, Adjunct Professor Coons.

**C. Elementary Plant Physiology**—An elementary study of the growth, nutrition, irritability and reproduction of plants with special reference to the application of these facts to plant culture. Two hours lecture. Two hours laboratory. Two hours credit. First semester. Professor Wilcox, Adjunct Professor Coons.

**D. Elementary Plant Pathology**—An elementary study of the more common diseases of cultivated plants; the best methods of controlling these by spraying, proper methods of cultivation, use of resistant varieties, etc., will be discussed. Two hours laboratory. Two hours lecture. Second semester.

Professor Wilcox, Adjunct Professor Coons.

**E. Home Economics Botany**—A general introduction to the science of botany. The students will become acquainted with the general morphology of the flowering plants. Accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. One hour lecture. Four hours laboratory. Three hours credit. First semester. Adjunct Professor Coons.

**F. Home Economics Botany**—An elementary study of the bacteria, yeasts and fungi in the home. One hour lecture. Four hours laboratory. Three hours credit. First semester.

Adjunct Professor Coons.

## AGRICULTURAL CHEMISTRY

This department gives instruction in the chemical principles of scientific agriculture. This instruction continues an entire year. It consists of lectures, quizzes and laboratory exercises. In the lectures the various experiments are performed and explained by the instructor. Later the student becomes more familiar with them by actually performing them himself in the laboratory. There are three lectures and quizzes and two laboratory exercises per week throughout the year. Though the course in Agricultural Chemistry is continuous it is also progressive. In the first semester the subject is taken up in a general way much as chemistry is taught in high and preparatory schools. The second semester is devoted to that part of chemistry which relates more particularly to agriculture.

**First Semester**—The work commences with lectures on general chemistry in which are discussed the relation of chemistry to the other sciences and the theories on which chemistry is based. The student is required to work out problems which give him an understanding of chemical combinations, etc. Then follows instruction

in laboratory manipulation, embracing the use of the various laboratory appliances and the actual construction of simpler pieces. The study of the chemical elements and compounds is taken up in the following order: oxygen, hydrogen, nitrogen, carbon, water, air, hydrochloric acid, chlorine, nitric acid and the nitrogen compounds, phosphorus and its compounds, sulphur and its compounds, silicon and its compounds, oxides of carbon, carbonates and carbon compounds, sodium and potassium and their compounds, calcium and magnesium and their compounds, iron and aluminum and their compounds, copper, zinc, lead, tin, arsenic and mercury and their compounds and alloys. Practice is given in the writing of equations.

**Second Semester**—The second semester is devoted to the study of the chemical composition of agricultural products or the problems on the farm involving chemistry. The subjects taken up are as follows: the water content and ash of plants, the non-nitrogenous organic compounds of plants, the nitrogenous organic compounds of plants, the chemistry of plant growth, composition of plants at different stages of growth, factors which influence the feeding value of crops, composition of coarse fodders, wheat, maize, oats, barley, rye, buckwheat, rice, and miscellaneous seeds, mill and by-products, roots, tubers, and fruits, fermentation, chemistry of digestion and nutrition, composition of animal bodies, and chemistry of soils. While no attempt is made to teach agricultural chemical analysis, the student is taught the underlying principles of the same and actually makes rough determinations of such constituents as moisture, ash, crude fiber, etc., in the laboratory. The Experiment Station laboratories, which are well equipped, are open for inspection. Thus students are given opportunity to see the work of one of the fundamental features of station activity.

## AGRONOMY AND FARM MANAGEMENT

**Field Crops**—The department is supplied with a well equipped lecture-room seating one hundred fifty students; two well lighted grain laboratories having seating capacity and working facilities for eighty students; necessary apparatus for weighing, measuring, and testing grains; material for laboratory use and demonstration

purposes, consisting of cereals, forage-clovers, grasses and miscellaneous crops in heads and threshed form, showing types and varieties.

**Grain Judging**—A laboratory course. Study of types of corn; training in corn judging and seed corn selection—several leading varieties being used and variety characteristics studied. Wheat, oats and barley are studied with reference to types, varieties and their adaptabilities, qualities, commercial classes and grades of the grain; practice in grain judging. The identification of grass, clover and weed seeds. Testing viability of seeds. Given both semesters to first year students.

**Crop Management**—Crops, weeds, and field management; the plant and its environment, controlling factors; structure and growth, seed, root, stem, leaf, composition and development; methods of improving field crops by selection, by crossing; the quality of farm seeds, adulteration, germination, etc.; classification of field crops; Indian corn, history and distribution, climate, production, and uses; composition and structure, grain, stover, classification; varieties of corn; selection of seed corn; soils and manures for corn; place of corn in rotation; soil preparation and seeding, cultivation, diseases, insects, and treatment; wheat, oats, barley, buckwheat, and rye, are treated in the same general way as corn. A number of the more important forage crops, such as sorghum, Kafir corn, millet, rape, alfalfa, and clover are treated in a similar manner. The value of the different grasses for pasture or meadow is discussed. Weeds and methods of handling crop rotations, their value and those best suited to Nebraska conditions. A few of the minor crops, as soy beans, cowpeas, broom corn, hemp, etc., are discussed briefly. Given to second year students, continuing through both semesters, with laboratory the first semester.

Soils—Instruction in soils is given during the third year of the course. The work is both general and practical. It is designed to inculcate the principles and practice of the subject. Special attention is given to Nebraska soil regions, soil types found therein, and management of the same.

**Soil Lecture and Text-book**—(1) Properties of soils; origin, deposition and natural transportation of soils; physical and chemical constitution of soils and subsoils; the function of humus, relation of the plant to plant food material in the soil; available and unavailable fertility; nitrification, accretion of nitrogen through leguminous crops; arrangement of soil particles; influence of the size of soil particles upon the rate of solution of plant food materials; forms in which water exists in soils, its movements in soil; evaporation from the soil; movement of air in soils; composition and action of soil air; relation of the soil to heat; reasons for tillage. (2) Management of soils; plowing, manner, time, depth, frequency, for what crops; subsurface packing, description, time, when useful; harrowing, time, methods, frequency; cultivating, methods, time, depth, frequency; rolling and floating, methods, time, occasions; crop rotations; effect of perennial forage crops; use of barnyard manure, green manure and commercial fertilizers.

**Soil Laboratory Practice**—Microscopic examination of soil to ascertain sizes and shapes of soil particles; soil as distinguished from pulverized rock; effect of water on soil temperatures; effect of drainage on soil temperatures; effect of soil drainage upon plant growth; effect of moisture upon the volume of soils; power of loose soils to retain water; power of compact soils to retain water; power of humus to retain moisture; rate of percolation of water through soils; rise of capillary water in soils; effect of mulches on evaporation of water from soils; rate of movement of air through soils; effect of lime on soils; effect of alkali on soils; flocculation of clay; power of water-free soils to absorb moisture from the air; fixation of certain substances by soil; effect upon plant growth of plant food material in the soil; amount of soil moisture required for plant growth; determinations of volume, weight, apparent specific gravity, and porosity of soils.

**Farm Management**—A course of lectures on general organization and management of a farm, choosing crops, establishing rotation, distribution of labor, keeping farm records and accounts. Given both semesters during the third year. The course will cover such problems as the proportion of capital which can be wisely invested in land, buildings, and equipment; what type of farm-

ing is best adapted to each student's conditions; the labor problem; should a farmer own or rent; the farm implement problem; how to choose a farm; cooperation; marketing problems; farm advertising; legal papers for the farmer, etc.

## ANIMAL HUSBANDRY

**Breeds of Live Stock**—All of the principal breeds of cattle, horses, sheep and swine are considered. Each breed is taken up separately and as much time devoted to it as the importance of the breed justifies. The general plan of the work is to establish the origin of the breed, to trace the development and, last of all, to make a careful study of its characteristics, adaptation and usefulness under various conditions. The study of breeds in the class room is accompanied by comparing and judging specimens of all the breeds of live stock which are adapted to this section of the country. The object of this work is to familiarize the student with their characteristics and general usefulness that he may thereby be better prepared to choose more judiciously among them when he has occasion to do so.

**Principles of Breeding**—The work in the "Principles of Breeding" is very closely related to the study of breeds. In tracing the development of the various breeds the methods employed by the breeders in forming these breeds are studied with a view to ascertaining the means by which they achieved success. Methods employed by the master breeders are, for the most part, worthy of imitation. Through long experience and observation many well-established principles and laws have been formulated, the observance of which is essential to successful breeding. Such are the laws of heredity, the laws of variation, the laws of atavism, the law of correlation of parts, etc. In addition to such things as in-and-in breeding, line-breeding, cross-breeding, grading up common stock, mating, reading and writing pedigrees, etc., are given as much attention as time permits. Attention is also given to the practical phases of stock breeding, such as herd management, feeding breeding stock, selection of breeding animals, buying and selling and exhibiting at stock shows.

**Judging Live Stock**—The course in judging live stock consists of demonstrations by the lecturer and practice by the students in judging animal conformation. The aim is to give the student the proper conception of the desirable types in all farm animals, types that prove most profitable to feed and put on the market. The profits from feeding animals are greatly enhanced by a knowledge of what constitutes good type and good feeding capacity. The work in cattle, for example, begins with the judging of fat steers ready for the block. The student learns what sort of an animal is most in demand by the buyers of fat cattle and what kind of an animal is capable of producing the largest gains in the feed lot. He learns to associate particular conformation or shape with both killing and feeding qualities. Once he has learned the desirable form of the steer finished for the market, he is next given work in the judging of feeder steers and breeding cattle. A great deal of emphasis is placed upon the judging of young bulls in order that the prospective farmer may be able to make a judicious selection of a sire for his herd of cattle, whether grade or pure-bred. A knowledge of what constitutes profitable type is of the utmost value to one engaged in breeding and feeding cattle for market. The University maintains individual specimens representing all the leading breeds of live stock for judging. The steers fed by the University which make each year such a favorable showing at the International Live Stock Exposition are used for class room illustration. No exhibitor in the country has excelled the record of the University of Nebraska in the exhibit of fat cattle. The showing of these animals is only secondary to their use in the student judging work. Judging live stock occupies two practice periods during each week of the first year and one practice period each week of the second year.

**Feeding Live Stock**—The work in stock feeding begins by a study of the various foods which are at the feeder's disposal in the making of beef, pork, mutton and milk. These foods are studied with reference to their composition, digestibility and physical texture. Attention is also given to the physiological processes in digestion and assimilation. Practice in compounding rations gives the student ability to put together a mixture of foods which proves most profitable to feed. The best methods of feeding each and

every class of farm animals are taken up in detail in a logical manner. Each class of animals must be fed differently. Young animals of a certain class require a different procedure than older and more mature animals. All such matters are given due consideration, the whole aim being to so equip the student with a general knowledge of foods and animal nutrition as to enable him to feed live stock most profitably.

## ANIMAL PATHOLOGY

**Anatomy and Physiology of Farm Animals**—Taught by lectures, text-books, recitations, charts, models, and dissection, together with some microscopic work. Charts and models are the latest produced, many of them being imported from Germany. The microscope is used to study various tissues and body fluids. Dissection is mostly on the dog or the cat with occasional demonstration of dissection on the horse and the ox. The greater portion of the time is spent on digestion and the digestive system. Absorption is next considered. Circulation is also studied quite fully. Other portions of the subject, being less important in Agriculture, are given less attention.

**Diseases of Farm Animals** (first semester) takes up the cause and prevention of digestive troubles, prevention of the loss of young animals due to navel infection, and emergency treatment. The teeth are studied with reference to their structure and dentition with a view of determining the age of animals by their teeth, but also as to their being a factor in bringing about indigestion. Emergency surgery is also taken up and methods of controlling hemorrhage and first aid to wire cuts studied.

**Contagious Diseases** are studied the second semester and the best methods of stamping out tuberculosis, hog cholera, etc. Students learn that it is profitable to employ only the best qualified veterinarian and are able to cooperate with him intelligently in eradicating any of the various contagious diseases he may have to contend with. Investigation has shown that 45% of the draft stallions in this state over four years old are unsound, and for this reason the subject of soundness is studied to a considerable extent, with a view of bringing about the selection of only sound sires.

Students are taught also how to splice ropes, make rope halters, and tie all of the different knots and ties that would be met with in using ropes on the farm or ranch.

## DAIRY HUSBANDRY

Instruction in this department covers the general practice of modern dairying, including the breeding, care and management of dairy stock. In detail, the instruction is divided into five sections, each having separate laboratories and assistants to look after the work.

The **first section** works in a laboratory arranged for the making of butter. This is provided with churns, both power and hand, also with equipment for ripening cream and the manufacture of butter. The room accommodates some twenty-five students and is so arranged that the work can be quickly and neatly accomplished. With the butter making practice, blanks are used to enable the student to follow a systematic method and become skilled in the operation.

The **second section** occupies the separator laboratory, provided with all the different makes and styles of hand separators, and a few that run by steam turbine power. These machines are of the latest pattern and fully equipped with all necessary utensils. Students are taught to set up and run the various machines. A regular system of testing is applied to each, so that students have opportunity to learn the quality of the separators from their own experience. The recent development of the hand separator system of dairying has brought this machine into general use, and it is important for every student of agriculture to know how to test these machines. In this room there is also a model milk bottler with cooler and aerator, and a complete line of utensils for operating a milk dairy. The production of certified and sanitary milk for market is an art very important, but little known in the west. Lectures are also given on the food value of milk for both man and beast and the various ways of making use of it in rations.

The **third section** works in a milk and cream testing laboratory, where students are taught how to test milk and cream for butter fat. The laboratory is provided with all the improved testing

machines, both hand and power, and a full line of glassware needed in the work. Lactometer instruction is given, and a test for adulteration of milk which may be used at the home, and these prove to be of great value. When we realize that the value of commercial cream in this state alone is close to ten millions of dollars, and that its value must be found by the Babcock testing method, we can understand the importance of every cream producer being skilled in the testing operation. The grading of commercial cream is a matter of study in this laboratory.

The **fourth section** is known as the dairy stock division. The work here deals with the breeding, judging, care and management of dairy stock. The herd is composed of some eighty head of dairy cattle, representing several breeds. This gives a fine opportunity to compare the various types and breeds by using their official milk and butter records. In this way students receive a most practical demonstration in selecting and handling dairy stock.

The **fifth section** works in the cheese laboratory, where instruction is given by a skilled cheese maker in the manufacture of Cottage, Brick, and Gouda cheese. This work is new and of much value, as the West offers a splendid market for all kinds of cheese.

The buildings provided for the dairy work are ample and well equipped. The butter-making, separating, and milk-testing laboratories are located in Dairy Hall, well constructed for practical work. The stock judging is done in the dairy barn where a large room is provided with elevated seats and cement floor, so that the animals may be brought in before the classes. The balance of the barn is devoted to stalls and rooms for storing feed. The cow stalls are of iron and the floors of cement, and carriers are provided for removing the manure. A silo is connected with the barn and all the improved methods for feeding are in use. It is the aim of the department to give the students taking this course a thorough and practical knowledge of western dairying, thus better fitting them for a profitable pursuit of this industry.

## ENGLISH

The work in English is required of all "regular" students, and continues through the four years. The purpose of the course is to

give instruction and drill in the use of correct forms in writing and speaking. The principles of correct, clear, straightforward expression are emphasized in lectures and criticisms of themes. In the senior year practice is given in writing articles for agricultural journals and other papers. Studies of the best literature are carried on in connection with the work in composition.

**A. Review of English Grammar**—Oral and written spelling; theme writing; selected readings. First year, first and second semesters.

**B. Principles of Rhetoric**—Paragraph writing; selected readings made the basis for written work. Second year, first and second semesters.

**C. Exposition and Argumentation**—Studies of the speeches of Burke, Webster, and other masters; practical themes on agricultural topics. Third year, first and second semesters.

**D. Argumentation and Public Speaking**—Writing of articles for newspapers and agricultural periodicals; selected readings; final review. Fourth year, first and second semesters.

## ENTOMOLOGY

Instruction in this department is given to both men and women during the third year of their course. In both courses two lectures are given each week, with frequent quizzes interpolated. One period of laboratory work is given each week and this is supplemented by class room demonstrations, illustration by means of the stereopticon and charts, and assigned readings in the regular text-book and on special topics. The courses aim to present a general but concise idea of the more ractical aspects of the subject, including not only the remedie for and methods of prevention of insect attack but also a sufficiently broad understanding of the underlying facts concerning their life histories and habits as is necessary for an intelligent conception of the reasons for the desirability of the recommended modes of procedure. The department is now equipped with one of the best libraries on economic entomology in the west, and both this and the new insectary and its apparatus are at the service of the interested and inquiring student.

**Course for Men**—The first semester begins with a study of the scope of entomology and its importance as an agricultural science, after which in a brief and untechnical way the essential facts of the structure, physiology, transformations and classification of insects are discussed. The twenty-three orders of insects are considered in turn, and while the relation of the various members of these orders to agriculture is especially emphasized throughout, enough of the structure and characters of the various groups is considered to enable the student to recognize most of the common insects he is liable to meet on the farm. In the second semester the principal injurious insect enemies of field and garden crops are first considered, followed by a similar consideration of the worst orchard and live stock pests of the state. In these lectures the appearance of the pest, its method of attack, the effect of this attack and means of preventing it, and the standard remedies are discussed in detail, together with approved formulae for preparing and methods of applying the various insecticides and methods of fumigation for stored grain pests. In these lectures the more important pests, such as the chinch-bug, Hessian fly, army worm, codling moth, etc., receive special lectures. Other special lectures are given on the role of insects as transmitters of diseases of man and the domestic animals and on the relation of our native birds and mammals to agriculture.

**Course for Women**—In the first semester the course for women is of a general and elementary character much like that given the men and involving a consideration of the orders of insects, but laying special stress upon the insect forms harmful or obnoxious in the household. The second semester is given over to a specific study of the more important household pests. The relation of mosquitos, house flies and fleas to human health form the subject of special lectures, while other lectures deal with the lice, mites, ticks, bed-bugs, gnats, bot-flies and other parasites of man and the domestic animals. Such insects as cockroaches and house crickets, house ants, silver-fish, clothes moths, carpet beetles, cheese mites, larder beetles, flour beetles, meal worms and others which are pests of the household are thoroughly dealt with.

## FARM MECHANICS

The **Course in Wood Work** makes the student familiar with the use and care of tools and gives him an idea of building and construction work. He is given a series of exercises to perfect, such as marking, sawing, planing. chiseling, splicing, mortising, tenoning, and door paneling. When proficient in the above he is given more advanced work; making sawhorses, ladders, wagon repairs, workbenches, tanks, rafters, roof trusses, skeletons of barns, houses, etc. The Wood Shop with its accessories occupies the whole of the second floor of Machinery Hall. Besides the main workroom, there is an office for the instructor, a stock room for lumber, and a tool room. In the main workroom there are forty conveniently designed workbenches, each equipped with a quick acting vise, a complete kit of carpenter tools and four lockers. There is also in this room a combined power rip and cross cut saw, a grindstone and a turning lathe. The tool room is equipped with special tools for the construction of buildings, wagons, etc., and all supplies and records are kept here.

The **work for girls** in this department begins with some of the simpler exercises in which they are instructed in the use of tools, especially sawing, planing, squaring, and the use of the hammer. Special attention is given to the construction of small articles of furniture, cabinet work, planning the home, designing and decorating, interior and exterior finishing, including painting, varnishing and frescoing. Accompanying this, lectures will be given pertaining to the selection of woods for interior finish, interior designs, care of wood work, walls, etc.

The **Forge Shop** is commodious, and well arranged. Thirty students can be given instruction in this line of work at the same time. The forges are of the hand blower type and the smoke is removed from the room by means of a large power-driven exhaust fan. Besides the regular set of forge tools at each anvil there are tool racks containing swages, fullers, cutters, headers, etc., benches, vises, post drills, emery grinder, shear, tire setter, and machine lathe. A set of exercises has been prepared, each indicative of some operation which is common to the repair shop. Before the student commences on an exercise, the instructor goes over it care-

fully before the class, pointing out the difficulties of forging. The following are some of the exercises: drawing, upsetting, bending, twisting, welding, tempering, tool making, repairing broken castings, axle setting, tire setting, pipe cutting, etc.

The study of **farm machinery** in our schools and colleges is practically new, and, until it has become thoroughly organized, is subject to some criticism. Where the outlay for farm machinery by each farmer is so great he should learn to buy with intelligence without depending upon the dealer. To equip the laboratory in this work, machinery of the most up-to-date type has been loaned by the various manufacturers. Not only is the machinery floor equipped with various types of standard machinery, but with machines designed for special purposes. The following is a brief outline of the work: setting up and tearing down machines, studying the different types of tillage machinery, calibrating drills and seeders, testing planters for accuracy of drop, testing and determining the efficiency of pumps, studying and testing windmills, studying and testing gasoline engines, studying and testing traction engines, determining the draft of plows, drill seeders, binders, etc. To make tests, calibrations, etc., such apparatus is used as can be easily prepared on any farm. In connection with the laboratory work a series of lectures is given on the selection, care, use, and design of tools.

**Rural Architecture**—At the time Nebraska was settled by the homesteaders the state was considered as a part of a desert and the pioneers built very cheap homes for themselves. There were two primary reasons for this, the lack of funds for better houses, and the fact that their settlement in the state was partially experimental and the farmers hesitated in making substantial buildings until the time came when they could be sure that the climatic conditions were such as to warrant the outlay for permanent structures. Nebraska houses throughout the state are now in a process of change from the cheap and temporary structure to the modern and stable homes not unlike those of the East. At present about 15 per cent of the total value of farm property is invested in buildings, hence, the necessity of putting some study on their arrangement and design. Farm buildings should be permanent and if they are poorly located or arranged they cannot be exchanged for new ones

and often many steps can be saved each day by having them more carefully designed or more efficiently arranged. The course in Rural Architecture is given to train the students along the lines of careful arrangement of farm buildings as pertaining to each other, as pertaining to their design and equipment. Studies will be taken up on the method of heating, water systems, sewerage, etc. Each student will be required to lay out a set of buildings and design them throughout, and it is preferred that he bring from home some rough sketch of a building which will need to be built sometime in the near future, and make complete working drawings for it. About five dollars will need to be invested in drawing instruments and a board, but after the student has become accustomed to their use they will be of great value to him when he returns home.

## HORTICULTURE

The aim of this department is to give the student an understanding of the practical operations connected with the different branches of Horticulture, and some idea of the main scientific principles underlying these operations. All topics are studied with reference to the conditions existing in Nebraska. The subject is taught by lectures and by practice work in the laboratory and field. To insure thoroughness in the practice work, the classes are divided into small laboratory sections, six to eight students being assigned to one assistant. The work in the first year has to do in the main with orcharding and the study of small fruits. The work of the third year deals more largely with ornamental and vegetable gardening. In the course for women particular stress is laid upon the growing of flowers and other ornamental plants both indoors and out. Students who complete this work satisfactorily and who in addition have had some practical experience, are prepared to engage in commercial orcharding or gardening on their own account, to superintend orchards for others, to judge fruits and vegetables at fairs and the like.

In addition to lecture rooms, the department has laboratories well adapted to the practical work of making cuttings, potting plants, grafting, budding, seed testing, etc. These laboratories accommodate thirty students at one time. Storage facilities and

artificial refrigeration for winter fruits and vegetables are provided. A large greenhouse is at the disposal of students in Horticulture, giving sufficient space for culture experiments.

Upon the campus is a large assortment of trees, shrubs, and vines, giving the student an opportunity for getting acquainted with the most important ornamental plants. The nurseries located near the campus give a practical idea of the methods used both in propagating plants and in caring for nursery stock. In the garden, devoted to small fruits, the students learn how such plants are propagated, planted, tilled, and pruned. An orchard of some twenty acres, planted to many kinds of fruit trees, affords the student valuable practical training in pruning, spraying, etc.

The library and bulletin room give the more ambitious students an opportunity to go deeply into any question in which they are interested, thus equipping themselves in both the practical and theoretical phases of Horticulture.

## FOR MEN OF THE FIRST YEAR CLASS

**A. Orcharding**—The management of both home and commercial orchards including the propagation, culture, harvesting, storing, and marketing of such tree fruits as the apple, pear, cherry, plum, and peach; a study of varieties of each with special emphasis on those suited to Nebraska conditions. Three hours of lectures with a two-hour practice period each week.

**B. Small Fruits**—A study of such fruits as the strawberry, blackberry, raspberry, gooseberry, currant, and grape. The small fruits are treated in much the same manner as the tree fruits mentioned above.

## FOR WOMEN OF THE SECOND YEAR

**C. and D. Home Horticulture**—Two lectures and one practice period per week throughout the year. The lectures in these courses cover orcharding, vegetable and ornamental gardening. Special emphasis is given the principles of ornamental gardening as applied to the home. The choice and culture of house plants is also discussed. The principal things taken up in the laboratory work are the identification of ornamental trees and shrubs; practice in making dormant cuttings of hardy shrubs, grapes, etc.; propagat-

ing hardy roses, hydrangeas, spireas, lilacs, snowballs, etc.; growing geraniums, coleus, chrysanthemums, and carnations from slips; dividing canna clumps; starting annual flowers from seeds; transplanting small seedlings; potting house plants; mixing and applying spray materials.

### FOR MEN OF THE THIRD YEAR CLASS

**E. Ornamental Gardening**—Two lectures per week during the first semester on the general principles of ornamental gardening, the methods of ornamenting farm and city homes, etc. In the two hours practice period which is given each week, some such work as the following will be given: identification of ornamental trees and shrubs; methods of propagating the same; forcing bulbs indoors; planning home grounds.

**F. Vegetable Gardening**—Two lectures and one practice period per week during the second semester of the third year. Lectures on such general topics as choice of site; preparation of ground; use of manures and fertilizers; double cropping, rotations, use of hotbeds in starting early vegetables, treatment of insect pests and diseases, storing vegetables, etc. The methods of growing each of the principal classes of vegetables are considered in detail. For practice work the students make hotbeds and start early vegetables in them; learn to use the seed drill; test the germination of vegetable seeds under various conditions; make plans for the vegetable garden; test various methods of storing the different classes of vegetables; practice judging various winter vegetables, and the like.

## MATHEMATICS

**Arithmetic**—The course in mathematics begins with a thorough review of arithmetic for those students who are found to need it. The fundamental operations of arithmetic will be reviewed and special drill given in fractions, decimals and percentage. The principles of arithmetic (such as literal arithmetic) will also be applied to algebra in connection with the work of this review.

**Algebra**—Algebra will be taken up with the text-book at the beginning of the second semester of the first year, and carried through two semesters. The student is made acquainted with

simple and quadratic equations, and much practice is given in stating and solving practical problems.

**Geometry**—The third year is given to plane geometry. The work is made practical and much time is given to original work in proving theories and solving problems. The student is given a thorough drill in the construction of geometrical figures and in the mensuration of geometrical magnitudes. Solid geometry is completed at the end of the first semester of the fourth year, while the last semester is given to a rigid review of algebra, including logarithms and simple curve tracing.

## PHYSICS

In the Four Years Course this subject is offered during the second semester of the second year and the first semester of the third year, and occupies three lecture hours and one two-hour laboratory period per week. During the first half year the time will be given to Elementary Mechanics including units of measurements, velocity, energy, work, horse-power and the practical study of the simple machines, such as the lever, pulley, etc. Hydrostatics and capillarity will also be given a place. The second half year will include Thermometry and Heat, with special reference to the steam and gas engines, Magnetism and Electricity and the fundamental principles of Optics. In 1910-1911, the work will be given as outlined for the Three Year Course, in 4 lecture hours and one two-hour laboratory period per week during the first semester of the second year.

## HOME ECONOMICS

The fact that sooner or later most women undertake the duties and responsibilities of the home, and also that the major portion of the time and attention of the majority of women is occupied with the home, or subjects relating thereto, are sufficient reasons why courses in home science, art and economy should be introduced into educational institutions where women are students. The public is now recognizing these facts and awakening to the need of making provision for the instruction of women in subjects relating to home life. People are coming to believe that, so far as the welfare of the state is concerned, the training of women in

home economics is quite as essential as is the training of men in agriculture and engineering. Furthermore, there is a growing sentiment in the rural communities that it is just as necessary for the farmer's daughter to have an opportunity to study home management as it is for his son to study farm management. There has, accordingly, arisen a demand for a place for young women in the School of Agriculture, where they may receive instruction in those branches which have to do with home keeping. To meet this demand, a three-story brick building has been erected on the University Farm. This building is designed to serve the double purpose of providing a home for women while in attendance at the school, and a place where practical instruction in cooking, sewing, laundering, and general housework may be given.

**Course of Study**—It will be seen by reference to the Course of Study that the women pursue the same academic studies as the men. They likewise have courses in horticulture, wood work and dairying. But instead of the subjects relating to farm crops and animals, given in the course for men, they are given instruction in cookery, sewing, general housework and the care of the home. These subjects are taught by the lecture laboratory method with practice work in the house. Students completing this course of study are prepared to enter the General Home Economics Group of the University. The work of this department is practical as well as educational. The purpose is to teach women how to prepare food so that it shall be both wholesome and palatable, how to make garments so that the family may be clothed in the most satisfactory manner with the money available, how to keep a house in a sanitary and attractive condition with the least expenditure of money and effort, how to feed and care for children, and what to do in emergencies. The students through their study and practice learn to respect the work of the home-keeper and come to a better understanding of the significance and importance of the home in its relation to society.

**Sewing**—A brief study of textiles is undertaken with the sewing during the first and third years. Hand and machine sewing are practiced in the making of garments and other useful articles for the home.

**Cookery**—Lectures on food with practical work in the kitchen laboratory are given the second and third years. On the first floor of the new building, there are two laboratory kitchens and one dining room for practice work. In these rooms the students learn to cook and serve meals. Careful attention is given to the cooking of foods commonly used in the home. In all the work the principles of cleanliness, order and economy are observed, and the food so selected and prepared as to render it both wholesome and attractive.

**Home Decoration**—In connection with the sewing there are lessons in drawing, color harmony and design. The purpose of this work is to develop the powers of observation, to enable the students to see and appreciate beauty, and to so train them that they will be able to dress and furnish homes in good taste.

**Household Economics**—In the fourth year a brief study is made of house plans and furnishings. House sanitation is considered with reference to the problems of heat, light, ventilation, water supply, etc. Instruction is given in the general management and care of the home including financial and domestic service problems, the feeding and care of children, and what to do in emergencies.

**General Housework**—Throughout the four years course there is opportunity for practice in general housework, including the care of rooms, laundering, cleaning, cooking, etc.

# SCHOOL OF AGRICULTURE

## THIRD YEAR CLASS--85

Andreas, William Claassen ..... Beatrice
Arnold, Ernest Charlie ..... Funk
Babcock, Heman Ernest ..... Columbus
Barrett, Howard Edward ..... Chadron
Booth, Sanborn Edward ..... Central City
Bormann, Frederick Herman ..... Chalco
Bull, Christian Bernhard ..... Elkhorn
Busch, Lloyd Albert ..... Orleans
Cacy, James Stewart ..... Albion
Campbell, Russell Eugene ..... Harbine
Claassen, John Jansen ..... Beatrice
Cone, Howard Henry ..... Bethany
Cummins, Harry Alonzo ..... Seward
Davis, Elliott Regester ..... Holbrook
Davison, Royce Clinton ..... Fairfield
Day, Will James ..... Superior
Dysart, Thomas Fred ..... Eagle
Fausch, Henry Robert ..... Guide Rock
Fiala, Anton Bedrich ..... Howells
Fitch, Arthur DeWitt ..... Atlanta
Forburger, John Casper ..... 3008 Holdrege, Lincoln
Forburger, Lena Marie ..... 3008 Holdrege, Lincoln
Ford, Cyrus Grant Emerald ..... Oakland
Francis, Raymond J ..... Gibbon
Frederickson, Oscar Fred ..... 619 So. 18th, Lincoln
George, Leon Oric ..... Normal
Gould, Harry Garvin ..... Republican City
Harrison, Samuel Thomas ..... Havelock
Hawley, John William ..... Brock
Higgins, Charles Calvin ..... Beatrice
Hofmeyer, Herman ..... Republican City
Hood, Samuel Lloyd ..... Dore, North Dakota
Horsh, John William ..... 3212 Dudley, Lincoln
Hurtt, Charles Oliver ..... Wilsonville
Hutchinson, Clyde William ..... Elgin
Isham, Russell Raymond ..... Buffalo Gap, South Dakota
Johnson, Delmar Noble ..... Lyons
Johnson, Roy Rex ..... Burchard

Jones, Albert Button ..... Doniphan
Kauffman, Benjamin Verne ..... Monte Vista, Colo.
Kauffman, Dwight Leslie ..... Monte Vista, Colo.
Kindig, Ethel Leta ..... Holmesville
Kraxberger, Michael Edward William ..... Gothenburg
Linder, Melville Milton ..... Berwyn
Long, Grace Cornelia ..... Wakefield
Loomis, Frederick Palmerlee ..... Ord
Luckey, William Henry ..... Columbus
Ludden, John Ernst ..... 1336 D, Lincoln
Lynn, Raymond Dennett ..... Dallas, South Dakota
McNeel, Edwin Lawson Davenport ..... North Platte
Matson, Elmer Eugene ..... Stromsburg
Maxfield, Don Deal ..... Dorchester
Mills, Benjamin Harrison ..... Arnold
Monnich, Edward Jacob ..... Hooper
Morrasy, Albert Clayton ..... 2544 O, Lincoln
Morris, Llewelyn E ..... Carroll
Nash, Kenneth Earl ..... Benson
Nelson, Hermann Arthur ..... Oakland
Nelson, Irvin Andrew ..... Pilger
Nelson, Otto Clarence ..... Scandia, Kansas
Nye, Homer LeRoy ..... Lexington
Pease, Harry Allen ..... Farragut, Iowa
Person, Ernest Theodore ..... Holdrege
Pierce, John Henry ..... Atlanta
Rees, David ..... Carroll
Reid, Andrew Joseph ..... Brooklyn, New York
Riggs, George Burton ..... Shubert
Ritchie, Ruth Harriet ..... Seward
Schneider, Ernest ..... Poole
Schobert, Benjamin Lyman ..... Papillion
Schoenbeck, Walter Oscar ..... Odell
Soukup, Frank S ..... Fremont
Stephenson, Ray ..... Clay Center
Studley, Russell Alger ..... Creston
Swanson, Edwin Clarence ..... Stromsburg
Tietze, Ernest Elem ..... Holbrook
Urban, Frank ..... Newboro
Vogel, Percy Godfrey ..... Florence
Webster, Chester Allen Arthur ..... Gibbon
Weyant, Merle Ethel ..... 1439 No. 25th, Lincoln
Whitmore, Ralph Brown ..... Elgin
Wilcox, Guy Emerson ..... Grant
Wilson, Mabel Agnes ..... Douglas

Wilson, Vera Bee.....Raymond
Young, Carl Stanley.....R. No. 4, Lincoln

SECOND YEAR CLASS--137

(Including First Year Students with High School Credits)

Aker, Lyman Louis.....Harvard
Amos, Mary Leonora.....University Place
Anderson, Earnest Sommer.....Ruskin
Anderson, John.....2216 Miami, Omaha
Applegate, Oscar Ezra.....Gibbon
Ashby, Anna Cloe.....Genoa
Ashby, Fern Lee.....Genoa
Axtell, Vivian Violet.....2801 S, Lincoln
Backlund, Theodore William.....Stromsburg
Barnum, Alston Duane.....2813 Shirley St., Omaha
Becker, William Frederick.....1736 L, Lincoln
Bern, Amy Christy.....Wahoo
Berry, Charles.....Edison
Berry, David Theodore.....Seward
Bigelow, Del Jay.....Harrison
Bigelow, Lee Franklin.....Harrison
Bigelow, Nettie Theo.....Smithfield
Blodgett, Kittie Flavilla.....Beatrice
Blodgett, Reuben Emory.....Beatrice
Bolton, Fred Samuel.....College View
Brainard, Willis Nathaniel.....Normal
Brinckerhoff, Gilbert Earnest.....Cuba
Brown, Benjamin Franklin.....Chappell
Bungor, Earl Amour.....College View
Burch, Harold Hiram.....Lander, Wyo.
Busch, Henry Christian.....St. Libory
Carpenter, Ray Wilford.....Fontanelle
Cejka, Rose Henrietta.....Valparaiso
Cizek, Mary Phoebe.....Prague
Clark, Flo.....Fairbury
Cole, Frank Howard.....Loomis
Comstock, Edgar Dewitt.....Comstock
Coupe, Henry Ala.....Falls City
Davis, Andrew Harrison.....Gordon
Davis, Joseph Raymond.....Holbrook
Davis, Melvin Dwight.....Pawnee City
Delano, Harry Calvin.....Arcadia
Demaray, Warren Gray.....Dunning
Dobson, John D.....Primrose
Domingo, George M.....Weeping Water

Downing, Willard Ross.....Bee
Duff, Daniel Robert.....Pierce
Ellison, Arthur Maxwell.....University Place
Erickson, John Erick.....Funk
Ericson, Reuben.....Stromsburg
Fishbach, Ethel Grace.....Beatrice
Ford, Richard Judson.....Oakland
Fowler, Edgar Chellis.....Cheyenne, Wyo.
Gage, Vernon Lasch.....Fairbury
Goehner, William Oscar.....Seward
Griesel, Charles Adam.....University Place
Hammond, Blanche Rose.....Marquette
Hammond, None Elma.....Marquette
Hanger, William Lunsford.....Waterloo
Hanna, Joy.....Lexington
Hanson, Linn Ford.....Concord
Hayward, William Hiram.....136 Linwood Ave., Kansas City. Mo.
Heiderstadt, Stewart H.....Geneva
Hendry, Walter James.....2713 Q, Lincoln
Heyn, Frederick Lawrence.....212 No. 22d, Omaha
Higgins, Pansy Myrtle.....Beatrice
Hill, Charles William.....Ithaca
Humphrey, Harold Leslie.....Beckersfield, California
Ireland, Fred Marshall.....Gordon
Isham, Edward Booth.....Mazon, Ill.
Junkin, Mary Gail.....1945 C, Lincoln
Kelsey, Charles Lee.....1025 B, Lincoln
Kent, Percy Rolland.....Denver, Colo.
Kjar, Albert August.....Lexington
Knapple, George P.....Lexington
Knott, May Josephine.....Ord
Kriebel, Lora Euallia.....Kenesaw
Krisl, Mary Ellen.....2840 R, Lincoln
Lauridsen, Helge.....Mason City
Lawrence, Charles Gladus.....Hershey
Lee, Mark Harold.....Shelton
Lindstedt, Marcus Carl.....Osceola
Lively, Clarence Roscoe.....R. No. 1, South Omaha
McCarthy, Lee James.....Newton, Kas.
McGee, Roy.....Bertrand
McGurk, James Francis.....David City
Magill, Alice.....Lincoln
Maish, Herbert.....Falls City
Marsh, Lola Mae.....Wisner
Mecham, Ina Rosella.....Grand Island

Melton, Don Sigal.....Wallace
Miller, John Louman.....Springfield
Musser, Henry Barr.....1516 S, Lincoln
Nelson, Carl Herbert.....Hooper
Niehus, William Frank.....Springview
Ohlsen, Winnie Atunia.....Oakland
Ollis, Ethel Marie.....Ord
Osborne, Dean Horace.....Bayard
Papez, Emma.....R. No. 3, South Omaha
Parks, Harrell Leonard.....Ord
Pascoe, Mary.....Fremont
Petring, George Kimmel.....Nebraska City
Phillips, Dorothy Phyllis.....1004 C, Lincoln
Pickens, Rex.....Powell
Pickering, Lois.....Steele City
Posson, Rutherford Jay.....Eureka
Powell, Effie L.....1544 C, Lincoln
Rand, Mathias.....Bradish
Reed, Thomas Mangan.....Lexington
Richey, Harry Wyatt.....4704 No. 24, Omaha
Roberts, Arthur Lester.....Joy
Roberts, Florence Edna.....Hebron
Robinson, Jay.....Poole
Rolofson, Lawrence Owen.....R. No. 5, Lincoln
Rolph, Walter Allen.....Smithfield
Schultz, Arthur Emanuel.....Elgin
Shahan, Clare John.....1727 Garfield, Lincoln
Shepherdson, Frank Harrison.....Riverton
Sindt, Henry.....Naponee
Sindt, Karl.....Naponee
Smith, George Lee.....Wayne
Stoddart, Paxton Colladay.....2305 A, Lincoln
Streitz, William Mickle.....Millard
Strope, Merwin Garvin.....Venus
Strope, William Wallace.....Venus
Sutton, William Austin.....Alliance
Swanson, Archibald Carl.....Aurora
Switzer, Wayne Joseph.....Weeping Water
Taylor, Leonard Burt.....4227 California, Omaha
Templeton, Ford.....Wahoo
Tilden, Gladys Lucile.....Benedict
Trigg, Clarence.....1817 Sewell, Lincoln
Tupper, Oscar Winters.....Riverton
Tyson, Edwin.....Mound City, Mo.
Wentz, Harry Maurice.....45th & Q, Lincoln
Whisenand, James Wilbur.....Harvard

Wilcox, Allison Wesley ..... North Platte
Wilcox, Frank Luther ..... Arborville
Williams, Ralph W ..... Carroll
Wineland, William Henry ..... College View
Wittman, Robert Joseph ..... 939 H, Lincoln
Wood, Louise Mae ..... Ellis

**FIRST YEAR--124**

Adams, Orra Scott ..... Venus
Ambrose, Frank Joe ..... St. Paul
Arnold, Arthur Harry ..... Inavale
Banks, Benjamin Franklin ..... Wausa
Barrett, Charles Irvin ..... Wood River
Belsky, Edna ..... Verdigre
Bennett, Rolley Ezra ..... Winnetoon
Bern, Carl Elmer ..... Wahoo
Bloodgood, Louis Abram ..... Beatrice
Bolton, Sidney Willard ..... Creston, Ia.
Booth, George Matthew ..... Lodge Pole
Boslaw, Frances Olivia ..... University Place
Bovey, John Royal ..... Crete
Brinton, Ellwood Holmes ..... R. No. 2, Lincoln
Buchanan, Elmer Ross ..... Syracuse
Buchanan, Roy John Callaway ..... Syracuse
Campbell, Arthur Webster ..... Bethany
Cone, Helen Henrietta ..... R. No. 1, Lincoln
Coplen, Clarence Peter ..... Guide Rock
Cottrell, Leon Everett ..... Normal
Coupland, William Cressey ..... Elgin
Coyne, Douglas Adelbert ..... Parkston, S. D.
Croft, Paul Harry ..... Fairfield
Davis, Kent Preston ..... 3244 R, Lincoln
Delano, Lois Elsie ..... Arcadia
Duey, Clarence Martin ..... Chester
Durkee, George Willie ..... Orchard
Ford, Edna Euphemia ..... Oakland
Gaeckler, Harry Binns ..... 703, No. 30, Lincoln
Gage, Wendell James ..... Fairbury
Gallup, Asa George ..... Friend
Gaylord, David Everett ..... Fontanelle
Gingrich, Fred Jacob ..... Aurora
Goffe, Jay Emory ..... University Place
Graff, Raymond Chester ..... Bancroft
Graves, Chester Arthur ..... Daykin
Hanlon, Leo James ..... Harvard
Hansen, Veda Laurenza ..... Archer

Hanson, Albin Warnard ..... Wahoo
Harris, Walter John ..... Havelock
Hayward, Alice Benjamine ..... Lincoln
Heupel, Anna Mabel ..... Roca
Hickel, Manford R ..... 402 So. 29th, Lincoln
Hitchcock, Alvin Ray ..... Whitney
Hoch, Edwin Franklin ..... Roca
Holthus, Herman ..... Smithfield
House, John Mathias ..... Valentine
Houseman, Amos LeRoy ..... Crawford
Jacobs, Harrison Godfrey Henry ..... Daykin
Jarchow, Joseph Herman ..... Daykin
Johnson, Gladys Jessie ..... Pawnee City
Johnson, Herbert Lewis ..... North Loup
Johnson, Roy Chester ..... Lyons
Jones, Henry Albert ..... Seward
Jones, William Thomas, Jr ..... Andrews
Keuten, Dietrich ..... Harbine
Kindig, Albert Sidney ..... Holmesville
Knudsen, John Herlup ..... Benson
Kozlik, Clement Frank ..... 50-400 Clark Ave., Cleveland, Ohio
Krewson, Ernest Levi ..... Gibbon
Kruse, Richard John ..... Oakland
Lawler, Virgil Allen ..... Greensburg, Ind.
Liebers, Hedwig Antonia ..... Minden
Lienemann, Arthur Henry ..... Fort Crook
Lindberg, Frederick Wilhelm ..... O'Neill
Lindburg, Eleanor Spurgeon ..... Polk
Lonergan, Grace Myrtle ..... Florence
Luckey, Hattie Franke (Mrs.) ..... R. No. 7, Lincoln
Luedtke, Edward ..... Creston
McCarthy, Joseph Thomas ..... Spalding
McDonald, Allen Herman ..... Geneva
McKeown, Frank Thomas ..... Newport
McKinstry, LeRoy Edwin ..... Sedgwick, Colo.
Mader, Elizabeth Belle ..... Grand Island
Matthews, Charles Curtis ..... 3169 R, Lincoln
Middlekauff, Earl Roscoe ..... University Place
Miller, Burdette Wabel ..... Davenport
Minier, Waldo B ..... Craig
Nelson, Charles Harry ..... Inland
Nelson, David Edgar ..... Lyons
Nelson, Edwin Clark ..... Superior
Nisley, Joe Edward ..... Lexington
Noland, Shirley Burr ..... North Platte
Novotny, Jaroslav ..... Clarkson

Ollis, Ruth Eleanor ..... Ord
Otto, Homer N ..... Phillips
Otto, Roy B ..... Aurora
Paulus, Frederick William ..... Inland
Pearson, Bessie Leah ..... Creighton
Pester, Arthur James ..... University Place
Philipsen, Moldt Henry ..... Hickman
Phillips, Omer Delos ..... Tecumseh
Pickering, Philip John ..... Steele City
Reime, Thomas R ..... Loomis
Reyner, Charley Henry ..... Broken Bow
Ring, Susannah Candace ..... Cheney
Robinson, Ralph Cornell ..... Bethany
Roy, Edwin Earl ..... 1112 So. 11, Lincoln
Schaer, Edward Albert ..... Superior
Scheib, Theron Dale ..... Dixon, S. D.
Schoenbeck, Helen Mary ..... Odell
Scofield, James Norman ..... 2450 So. 17, Lincoln
Sell, Albert Emil ..... Milford
Sexson, Eugene Harvey ..... Fremont
Shephard, James Frederick ..... Fremont
Sipe, Paul Revere ..... 2971 Q, Lincoln
Sjogren, John Wilhelm ..... Funk
Smith, Charlie Ray ..... Trenton
Snyder, Russell Charles ..... Loup City
Stetina, Frank ..... Exeter
Stevens, Frederick Henry ..... Lawrence
Stout, Donald John ..... 1735 Euclid Ave., Lincoln
Swanson, Philbert Auscar ..... Funk
Thompson, Benjamin Harrison ..... Riverton
Thrapp, Elmo ..... Ulysses
Torell, Judith Elenora ..... Swedeburg
Trotter, Harley Elijah ..... Spalding
Van Housen, John ..... Schuyler
Werner, John Carl ..... Robbins, Ia.
Werner, Otto E ..... Falls City
Wolters, Jacob ..... 2630 H, Lincoln
Worrall, Mark Robert ..... 850 No. 26, Lincoln
Work, Kenneth Elwin ..... Litchfield
Zabel, Irwin Chalon ..... R. No. 3, Lincoln

### SPECIAL STUDENTS--13

Barnes, Clara Margaret ..... 1318 So. 28, Omaha
Carrington, Mabel Susan ..... University Place
Deeds, Ellis Earl ..... Stromsburg
Deweese, Alice Town (Mrs.) (Graduate Student) ..... 621 No. 24, Lincoln

Deweese, F. M. (Graduate Student) ..... 621 No. 24, Lincoln
Ernst, Conrad Walter ..... 1418 So. 10, Omaha
Flack, George Clayton ..... 2634 Harney, Omaha
Fowler, Marie Belle ..... 1789 So. 26, Lincoln
Goodbody, Maurice Frederick ..... Haledon, Patterson, N. J.
Ludlam, J. Guthrie ..... 2151 So. 15, Lincoln
McLean, William Minden ..... 345 No. 30, Lincoln
Nelson, Anton Emanuel ..... 3227 Holdrege, Lincoln
Schlichtemier, Omer Frederick ..... Nehawka

## SUMMER SESSION--86

### 1909

| NAME | HOME ADDRESS |
|---|---|
| Anderson, Maud Ruth | R. No. 3, Box 16, Lincoln |
| Armstrong, Nell | Germantown |
| Aukerman, Gertrude Belle | R. No. 3, Box 51, Havelock |
| Baer, Alva Aldus | Lincoln |
| Barger, Esta | 1945 R, Lincoln |
| Bickford, Kate Estella | ,320 North 30, Lincoln |
| Bristol, Louise Bertha | Waco |
| Brooks, William Francis | Lincoln |
| Brown, Inez Harriet | Sargent |
| Burge, Ethel May | Ulysses |
| Burns, Lillian Isabel | (Registered at University) |
| Calkins, Georgia | 1236 T, Lincoln |
| Campbell, Jean | Georgetown |
| Cone, Bernice | Wahoo |
| Conkling, Portia Maia | 209 South 18, Lincoln |
| Creekpaum, Grace Anna | 700 North 24, Lincoln |
| Crozier, Harold Robbins | R. F. D., Havelock |
| Cutter, Mabel Ellen | Bethany |
| Dauwalter, Jane | Denton |
| Delano, Faye Olive | Bethany |
| Durbin, Florence | 3090 R, Lincoln |
| Dygert, Iva Florence | Beaver Crossing |
| Eaton, William Dorman | Benkelman |
| Elliott, Anna Mary | 741 South 27, Lincoln |
| Engen, Blanche Anna (Mrs.) | 1138 G, Lincoln |
| Evans, Maude Aseneth | Thornburg |
| Evans, Paul Whiting | 865 North 27, Lincoln |
| Gage, Ralph Harold | Fremont |
| Gardner, Clara Maybelle | Marengo |
| Gowing, Mabel Frances | 1720 Howard, Lincoln |
| Graham, Grace Irene | Raymond |
| Grant, Fern Frances | 2145 N, Lincoln |
| Grimm, Ella M. | Roca |

Grimm, Emma R. ..... Roca
Haist, Rose Izola ..... Denton
Haist, Ruth Olive ..... Denton
Haner, Bertha E. ..... Bethany
Hoffman, Gladys Valentine ..... 2250 Sheldon, Lincoln
Hutchinson, Sadie Lavina ..... Arapahoe
Jacobs, Elsie S. ..... Daykin
Jenkins, Clara Alice ..... Lincoln
Jess, Helen ..... Plattsmouth
Johnson, Edith Caroline ..... Stromsburg
Johnson, Julia Lucile ..... Yutan
Johnson, Sophia Emma ..... Denton
Kruse, Orvy Leland ..... 3071 Kleckner Court, Lincoln
Lalley, Augustina Clara ..... Lawrence
Larsh, Mary E. ..... Hickman
Leamer, Esther Viola ..... Dakota City
Lewis, Elsie Evelyn ..... Arapahoe
Luckey, Mrs. Hattie C. ..... Lincoln
McCurry, Grace R. E. ..... 2753 Dudley, Lincoln
McKay, Carlotta ..... 2510 South 8, Lincoln
May, Ida Leonora ..... 1208 O, Lincoln
Melia, Katherine L. ..... Melia
Meyer, Nettie ..... Bethany
Mollerstrom, Ella Theresa ..... Wahoo
Mollerstrom, Mabel Elizabeth ..... Wahoo
Moore, Julia Ann ..... Denton
Moritz, Clara Pauline ..... Davey
O'Donnell, Nora Mary ..... Colon
Packwood, Oma Oella ..... Arapahoe
Piper, Elsie Mabel ..... Ashland
Platz, Nellie Maybelle ..... 1949 South 16, Lincoln
Priesner, Wilhelmina Fredericka ..... 1504 R, Lincoln
Purkhizer, Lillian Albertine ..... 746 Rose, Lincoln
Rice, Alden Nixon ..... 2950 P, Lincoln
Robertson, Bess ..... Dakota City
Rogers, Frances Harriet ..... Bennett
Rolofson, Pearl ..... Route No. 5, Lincoln
Rowe, Eva Marguerite ..... 1260 South 22d, Lincoln
Seymour, Elizabeth Putnam ..... Route No. 4, Lincoln
Shidner, Ruby Maude ..... Stromsburg
Shipman, Lizzie Apollonia ..... Bethany
Stander, Alice ..... Louisville
Stoner, Georgia Juniata ..... 1347 North 22d, Lincoln
Swaney, Grace ..... Emerald
Taylor, Sarah Gertrude ..... Denton

Trautte, Anna Livone (withdrew) ..... 2311 A, Lincoln
Unangst, Edna Sarah ..... Sinten, Texas
Waddell, Mabel Edna ..... 1801 North 26, Lincoln
Warner, Esther ..... 1619 R, Lincoln
Warner, Gertrude Emaline ..... Beaver Crossing
Wells, Marta E ..... College View
Woodard, Emily ..... 1812 H, Lincoln
Young, Etta Mae ..... Bethany

WINTER COURSE--132

Ambrose, Frank Joseph ..... St. Paul
Anderson, Edwin Andrew ..... Arcadia
Anderson, George Henry ..... Cowles
Anderson, Harry Edward ..... Cozad
Anderson, Walter August ..... Arcadia
Andrus, Emma H (Mrs.) ..... 3100 R, Lincoln
Arter, Jason Richardson ..... Kirkwood
Barnes, Ora ..... Litchfield
Bartels, George Henry ..... Hubbard
Beal, Frank Pryor ..... Red Cloud
Becker, Henry Harrison ..... Union
Becker, John Thadius ..... Union
Bloom, David William ..... Pender
Brigham, Homer Ashton ..... Osceola
Brodecky, Emil Jerry ..... Heun
Burroughs, Albert Lash ..... Filley
Colson, Burnell ..... Fremont
Cromer, George Chalmers ..... Gering
Crozier, Roy Thomas ..... Guide Rock
Dinklage, George Henry ..... Pender
Donelson, William Raymond ..... Stromsburg
Ellyson, George Allen ..... Newcastle
Elquest, Reuben Emley ..... Mitchell
Ernstmeyer, John Fred, Jr ..... Grand Island
Farwell, Verner John ..... DuBois
Fenner, Chancy Fay ..... Merna
Frantz, Martin Earl ..... Holmesville
Fridrich, Clarence R ..... Tyndall, S. D.
Fujan, Charlie Frank ..... Prague
Fulmer, Hurbert Clinton ..... Belvidere
Gaumer, John ..... Kimball
Glover, Earl ..... Comstock
Goebel, Henry ..... West Point
Grosse, Hugo Richard ..... Atlanta
Grove, Harry Merril ..... Spalding

Hagberg, Ture....1242 K, Lincoln
Hahn, Henry August....Falls City
Hanson, Dean....Wayne
Hanson, Paul Jęan....Concord
Harder, Hans Peter....Chalco
Hardin, Allen....Cambridge
Haring, Alfon Charles....Franklin
Haring, Herbert George....Reamsville, Kansas
Hasselbalch, George....Shelby
Henkel, Frank....Gladston
Higgins, Charles Francis....Hartington
Hildebrand, Daniel Monroe....812 Bancroft, Omaha
Hoegh, Peter....Hampton
Holaday, James Elbert....1770 No. 30, Lincoln
Hruby, Charles Stephen....Touhy
Jones, Roy Allen....Scotts Bluff
Karel, Jerry....Clarkson
Keefe, James Houston....York
Knuth, Peter Henry....Cedar Bluffs
Kremlacek, James Frank....Weston
Kugler, Guy George....Riverton
Lampert, Raymond Mathias....Wahoo
Langenheder, John....Grand Island
Larsen, Otto Soren....Marquette
Love, Roy Ernest....Cozad
Luebs, Albert....Wood River
Lyon, Harry Alex....Malmo
McCombs, Dwight Warren....Monroe
McEachem, Benjamin Harrison....Wayne
Manley, Jesse Linton....Lyons
Marsh, Charles Ber....Fremont
Matthews, Charles Curtis....3169 R, East Lincoln
Mentzer, Irvin Eugene....R. No. 3, Lincoln
Miller, Swigart French....Holmesville
Millsap, Mark Irving....R. No. 2, Marquette
Moore, Charles Eugene....Decatur
Moss, Eben Willard....Ord
Nelson, Chris Leth....Elba
Nelson, Ernest Wilford....Genoa
Nelson, Julius William....Dannebrog
Nelson, Laurel Ernest....Belvidere
Nelson, Peter....Harvard
Nelson, Petrus Christophus....Stromsburg
Novotny, Frank Joseph....Clarkson
Olsen, Walter Wilmer....Greenwood
Olson, Arthur Julius....Swedeburg

Palser, Edgar Seymour ..... North Loup
Parsons, Howard John ..... Norfolk
Pelton, Charles Lyle ..... DuBois
Peterson, Alfred Martin ..... Mason City
Peterson, Emil S ..... Stromsburg
Pop, Frank Joseph ..... Weston
Poppen, John Albert ..... Weyerts
Prowett, Harold Leslie ..... Fullerton
Raasch, Earl John ..... Farnam
Rasmussen, Otto Marion ..... Scotia
Reid, Ira George ..... Primrose
Reyner, Charles Henry ..... Broken Bow
Ritchie, Charles Bird ..... Florence
Roberts, William Emanuel ..... Gordon
Rodekohr, Edwin C ..... Battle Creek, Mo.
Rodekohr, Otto A ..... Elma, Mo.
Sawyer, Arthur Andrew ..... Page
Schwan, Clarence George ..... Humboldt
Scroggin, Maple Teavis ..... Kearney
Sidak, Joseph Frank ..... Hartington
Siert, Henry Max ..... Millard
Simpkins, Edward Merchant ..... Dewitt
Skupa, Joseph ..... Chicago
Slagle, Edward William ..... Barada
Smith, Dean Warren ..... Carroll
Smith, Hartford Hagarty ..... Wayne
Strand, William Harold ..... Belvidere
Sundberg, John Arthur ..... Aurora
Swanson, Paul H ..... Morrill
Teuscher, William Howard ..... Milford
Tharp, Charles Earl ..... McCool Junction
Thompson, Earnest Leonard ..... Malmo
Todd, L. G ..... Nehawka
Trotter, Harley Elijah ..... Spalding
Trued, Luther Emanuel ..... Ceresco
Van Anda, Carmi Houston ..... Fremont
Vaughn, George ..... Fullerton
Vaughn, Louis ..... Fullerton
Von Seggern, Fred ..... Scribner
Wagoner, Earl William ..... Bradshaw
Walz, George Ritchy ..... Hartington
Wareham, Glen Galloway ..... Kearney
Walin, Carl Robert ..... Ceresco
Weinert, Carl Clayton ..... Falls City
Westenfield, William August ..... Eustis
Wiese, Clarence Henry ..... Grand Island

Willrett, Leamon Earl ..... Dekalb, Ill.
Wilson, Alva ..... Bethany
Younglund, Emil Joseph ..... Stromsburg
Zeller, Henry Teisher ..... Palmer
Zorn, Ernest Carl ..... Falls City

# SCHOOL OF AGRICULTURE

## ALUMNI

### 1901

| NAME | HOME ADDRESS |
|---|---|
| Stouffer, David F | So. Omaha |

### 1903

| | |
|---|---|
| Beckford, Fred Henry | Utica |
| Bottorff, Arthur Madison | Gretna |
| Davis, Herbert William | 1945 Prospect, Lincoln |
| Parmenter, Earl | Kenesaw |
| Perin, Chester Dale | Lincoln |
| Sohus, Allen Burnet | Lincoln |
| Steffen, Edward Elmer | Diller |
| Stratton, Axel W | Gresham, Ore. |
| Tolles, Earl Ankeny | Laurel |
| Unitt, William Garfield | Seward |

### 1904

| | |
|---|---|
| Beach, Frank Wardell | Lincoln |
| Bille, Max Henry | Box 61, Palo Alto, Cal. |
| Brown, John Marshall | York |
| Chase, Carl Fred | Manhattan, Kans. |
| Dawson, James Wilber | Lincoln |
| Ehlers, Harvey William | Roca |
| Haskell, Earl Stanley | Lincoln |
| Little, Merle | Benson |
| Lute, Harry Detlef | Paxton |
| Mecham, Earl Alvin | Kenesaw |
| Melick, Charles Wesley | Omaha |
| Roberts, Herbert Haven | Lincoln |
| Smutz, William Walter | Pawnee City |
| Tolles, Chester Warren | Laurel |
| Tolles, Ralph Louis | Laurel |
| Vanderslice, Howard Roy | Cheney |
| Young, Fred Louis | Morrill |

### 1905

| | |
|---|---|
| Coad, Arthur Lawrence | Omaha |
| Cramer, William Glenn | Albion |
| Dickman, Lloyd Lavern | Lincoln |
| Dill, Earl Philip | Belvidere |
| Downey, William Fuller | Fairbury |
| DuBois, Ernest Blois | San Rafael, Cal. |

DuBois, Henry Augustus.....Lower Lake, Cal.
Gurney, Charles Edward.....Red Cloud
Harnly, Earl Russell.....Beaver City
Herron, Leonard S.....Lincoln
Holub, James William.....Ft. Crook
Hopt, Erwin.....Lincoln
Hubbard, Edward Garieth.....Brock
Jameson, Edward Lester.....Moomaw
Lazure, Charles Basil.....Blair
McCartney, Herbert Ellsworth.....Ames, Iowa
McNeel, Daniel Baker.....North Platte
Marino, Erasto A.....Buenos Ayres, Argentine Republic
Newell, Jesse Dawson.....Columbus Junction, Iowa
Parmenter, Elza.....Kenesaw
Pettycrew, Earl Milton.....Harmony
Pochon, Frederick Adolph.....Strasburger
Ruff, Ernest Allen.....Papillion
Searle, Ralph Homer.....Lincoln

1906

Ankeny, Mark Tolles.....Laurel
Armstrong, William James.....Ord
Blanchard, Warren Holder.....Friend
Boyd, Frank C.....Juniata
Brockman, Otto Henry.....West Point
Broderick, Carl Alexander.....Fairfield
Colvin, Arba Daniel.....Skidmore, Mo.
Cottril, Roy Elden.....Skidmore, Mo.
Davis, Ollin Lotis.....Pawnee City
Dawson, Ralph Ward.....Lincoln
Douglas, Howard Walter.....Lincoln
Erickson, Robert Theodore.....Lincoln
Field, Otis Sikes.....Wright, Texas
Forward, Floyd Frederick.....Prairie Hill, Mo.
Gibb, John James.....Staplehurst
Grant, James Irwin.....Emerick
Harvey, Glenn Andrew.....Lincoln
Hoye, Thomas Patrick.....Wood River
Jacobs, David Wesley.....Lincoln
Jenkins, Muir Tease.....Lincoln
Matteson, Fred Hayward (deceased).....Lincoln
Mecham, Floyd Joseph.....Kenesaw
Middleton, James A. Garfield.....Brady
Nickey, Paul Amos.....Kearney
Pedrett, Ulrich.....Kimball
Peterson, Frederick Ferdinand.....Herman
Pickens, Plato.....Huntley, Mont

Porter, George Lyon ..... Chicago
Prentice, George Sylvester ..... Hebron
Reid, James A ..... Primrose
Rist, Frank J ..... Humboldt
Sjogren, Carl Fred ..... Kress, Texas
Slocum, Clayton Newton ..... Blair
Snodgrass, Omer Leslie ..... Johnson
Strawn, Roy Jackson ..... Wymore
Stein, Herman Christian ..... Owanka, S. D.
Stelk, Willie Detlef ..... Grand Island
Van Boskirk, John ..... Lincoln
Wood, William Righter ..... Omaha
Young, Lee Andrew ..... Craig

**1907**

Allison, Harry ..... York
Barkhoff, James August ..... Fort Shaw, Montana
Barnes, Welton Casner ..... Auburn
Benger, Curtis Baden ..... Callaway
Bigelow, Alfred Rufus ..... Fairbury
Blair, Benjamin Vernaldo ..... Lexington
Bolling, John August ..... Ft. Crook
Bonner, Ernest Edward ..... Shelby
Bowman, Carl Eugene ..... Hardin, Mont.
Brodecky, Emil Ernest ..... Howells
Condict, Winthrop Campbell ..... Saratoga, Wyo.
Conley, Frank Wellington ..... Broken Bow
Cornils, Arthur Herman ..... Columbus
Crabtree, William Able ..... Bethany
Culver, Vere Sanford ..... Albion
Currier, Edwin Lovejoy ..... St. Edward
Duncan, James Roy ..... Peru
Edgecombe, Tyler Mengel ..... Geneva
Fawell; George William ..... Lincoln
Ford, Archibald Maurice ..... Oakland
Gross, Robert Arthur ..... Madison
Hall, Randall Harris ..... York
Haumont, William Thomas ..... Broken Bow
Kasak, Peter ..... Davenport
Kimbrough, Claude James ..... Geneva
Kinney, Earl DeWitt ..... Wymore
Kuska, Valentine ..... Ohiowa
McKinney, James G ..... Wilsonville
Miller, Lewis B ..... Bloomington
Morrasy, Edward Anthony ..... Dorchester
Myers, Morris Elwin ..... Broken Bow
Pierce, Frank Edward ..... Tekamah

Shotwell, Roy Thomas.....Sayre, Okla.
Thurston, Willett Minor.....Lincoln
Westover, Fred Amos.....Lincoln
Wilson, Alfred Wayne.....Alliance

1908

Andrews, Charles Henry.....Anselmo
Bailey, Earl William.....Naches, Washington
Barr, Harrison George.....Stanton
Barth, Arthur.....Billings, Montana
Beckord, Martin Oswald Reinhardt.....Utica
Beebe, Prentise Eli.....North Bend
Brockman, Ross Wallace.....Humboldt
Cheek, William Harrison.....South Omaha
Clark, David Dean.....Victoria, Texas
Clarke, Robert Elmer.....New Castle, Wyo.
Clifton, Elisha Elliott.....University Place
Cummins, Herschel Burton.....Seward
Francis, Roy Edward.....Lincoln
Gramlich, Howard John.....South Omaha
Gurney, Joseph.....Inavale
Hardin, Harry D.....Alma
Harding, William Gates.....Tekamah
Haug, James Henry.....Shelton
Hayward, Chester Joseph.....Broken Bow
Hufman, Glenn Clair.....University Place
Kendall, Everett Gay.....Santee
King, Howard Scott.....Schuyler
Laub, Fred Norman.....Chapman
Loomis, Theron Theodore.....Lincoln
McNare, Herbert Cleveland.....Valentine
Marsh, Lewis Folsom.....Bozeman, Mont.
Marshall, Roy Edgar.....Arlington
Monson, Andrew Mangus.....Osceola
Mullenhoff, Herman George Julius.....Gresham, Ore.
Nerud, George.....Dorchester
Nightingale, Herbert Spencer.....Loup City
Parmenter, John Glenn.....Los Angeles, Cal.
Poitevin, Lawrence.....Norden
Ramser, William Frederick.....Washington
Ransom, Schuyler.....Clay Center
Rickly, Frederick Augustus.....Hobart, Okla.
Rupert, Homer Benjamin.....Broken Bow
Schoenleber, Walter Raleigh.....Bethany
Shedd, Arthur Reed.....Loomis
Smelser, Harry Horatio.....Julesburg, Colo.
Streitz, Charles Uhlig.....Millard

Tinker, Edward Porter ..... Narka, Kan.
Uhl, Roy Spencer ..... Lincoln
Ulmann, Karl August ..... Lincoln
Vandenberg, Evert DeWitt ..... Dillon, Montana
Wertman, Clarence Charles ..... Milford
Westover, Edward Clarence ..... Lincoln
Witt, Rudolph ..... Scribner
Woodward, Ernest Franklin ..... Hebron
Yates, Clark Webb ..... Geneva

**1909**

Albert, John Jr ..... Wahoo
Allen, Ephream David ..... Clay Center
Ankeny, Delmar Henry ..... Laurel
Anthony, Edgar Tribble ..... Lexington
Asendorf, Bernhardt Herman ..... Lincoln
Beckhoff, Alexander Henry ..... Thedford
Bellows, Otto Richard ..... Fairmont
Boydston, Earl Wiswell ..... Holdrege
Brown, William Tarbell ..... Scribner
Camp, Ray Herbert ..... Republican City
Capron, William Lawrence ..... Kanona, Kas.
Carpenter, Felix Stephen ..... Poole
Carse, John Filius ..... 509 So. 12th, Omaha
Christensen, Martin Frederick ..... Superior
Coupland, John Charles ..... Elgin
Doolittle, Warren Andrew ..... North Platte
Dopp, Herbert Roscoe ..... Hickman
Dysart, Porter William ..... Eagle
Elder, Albion Brenton ..... Riverton
Ellis, David Robert ..... Creighton
Ellison, Estella May ..... University Place
Emigh, Lawrence Edwin ..... Dawson
Fowler, Dennis Cleveland ..... North Platte
French, Hallie Clarence ..... Arlington
Gates, Frederick Trumble ..... Fort Crook
Graham, Woodson ..... Gibbon
Hall, Phil Louis ..... 1315 C, Lincoln
Haumont, Jules Luther ..... Elton
Heim, Emerson Walter ..... Dawson
Hennies, Marie Dorothea ..... Adams
Herminghaus, Ernst Herman ..... 506 So. 10th, Lincoln
Hofmeyer, Franz ..... Republican City
Hunter, Paul Crary ..... Raymond
Hutchins, Charles Webster ..... Weeping Water
Isham, Agnes Anna ..... Buffalo Gap, S. D.
Johnson, Harry Herbert ..... Lyons

Junkin, Max Wallace ..... Smithfield
Junkin, Russell Joseph ..... Smithfield
Kindig, Ira Nelson ..... Holmesville
Kraxberger, Alfred Frank ..... Gothenburg
Kuska, Joseph Benjamin ..... Ohiowa
Lamp, Albert Lee ..... Inland
Lawson, Charles William ..... Santee
Liebers, Otto Hugo ..... Minden
Luebs, Rudolph Henry ..... Wood River
McArdle, LeRoy Philip ..... Washington
Middleton, Archie Donaldson ..... Brady
Moseley, Thomas Wesley ..... 1626 E, Lincoln
Nelson, Clarence James ..... Pilger
Ollis, William Mathias ..... Ord
Parmenter, Ray Allen ..... Kenesaw
Pollard, Oren Malcolm ..... Nehawka
Pray, John Lyman ..... Loup City
Rands, Robert Delafield ..... Lincoln
Rhodes, Noel Nicholson ..... Creighton
Richey, Charles Reen ..... 4701 No. 24th, Omaha
Ritchie, George Edgar ..... Rising City
Robertson, Lorn Cleveland ..... Iota, Louisiana
Rosenbaum, Ray ..... Kennard
Saul, Ralph Stanley ..... Superior
Schulte, William Charles ..... Elgin
Sjogren, Oscar Warner ..... Funk
Thompson, John Pryce ..... Shelton
Tipton, Claude Jones ..... Seward
Vanskiver, John ..... Davenport
Wait, Lisle Loren ..... Coleridge
White, George Allen ..... St. Paul
Wilcox, Walter Edward ..... Arborville
Williams, Robert Loring ..... University Place
Yeakle, Oscar Raymond ..... Fairbury
Young, Irving Snell ..... Havelock

1910

Andreas, William Claassen ..... Beatrice
Arnold, Ernest Charlie ..... Funk
Babcock, Heman Ernest ..... Columbus
Barrett, Howard Edward ..... Chadron
Booth, Sanborn Edward ..... Central City
Bormann, Frederick Herman ..... Chalco
Bull, Christian Bernhard ..... Elkhorn
Busch, Lloyd Albert ..... Orleans
Cacy, James Stewart ..... Albion
Campbell, Russell Eugene ..... Harbine

Claassen, John Jansen ..... Beatrice
Cone, Howard Henry ..... Bethany
Cummins, Harry Alonzo ..... Seward
Davis, Elliott Regester ..... Holbrook
Davison, Royce Clinton ..... Fairfield
Day, Will James ..... Superior
Dysart, Thomas Fred ..... Eagle
Fausch, Henry Robert ..... Guide Rock
Fiala, Anton Bedrich ..... Howells
Fitch, Arthur DeWitt ..... Atlanta
Forburger, John Casper ..... 3008 Holdrege, Lincoln
Forburger, Lena Marie ..... 3008 Holdrege, Lincoln
Ford, Cyrus Grant Emerald ..... Oakland
Francis, Raymond J ..... Gibbon
Frederickson, Oscar Fred ..... 619 So. 18th, Lincoln
George, Leon Oric ..... Normal
Gould, Harry Garvin ..... Republican City
Harrison, Samuel Thomas ..... Havelock
Hawley, John William ..... Brock
Higgins, Charles Calvin ..... Beatrice
Hofmeyer, Herman ..... Republican City
Hood, Samuel Lloyd ..... Dore, North Dakota
Horsh, John William ..... 3212 Dudley, Lincoln
Hurtt, Charles Oliver ..... Wilsonville
Hutchinson, Clyde William ..... Elgin
Isham, Russell Raymond ..... Buffalo Gap, South Dakota
Johnson, Delmar Noble ..... Lyons
Johnson, Roy Rex ..... Burchard
Jones, Albert Button ..... Doniphan
Kauffman, Benjamin Verne ..... Monte Vista, Colo.
Kindig, Ethel Leta ..... Holmesville
Kraxberger, Michael Edward William ..... Gothenburg
Linder, Melville Milton ..... Berwyn
Long, Grace Cornelia ..... Wakefield
Loomis, Frederick Palmerlee ..... Ord
Luckey, William Henry ..... Columbus
Ludden, John Ernst ..... 1336 D, Lincoln
Lynn, Raymond Dennett ..... Dallas, South Dakota
McNeel, Edwin Lawson Davenport ..... North Platte
Matson, Elmer Eugene ..... Stromsburg
Maxfield, Don Deal ..... Dorchester
Mills, Benjamin Harrison ..... Arnold
Monnich, Edward Jacob ..... Hooper
Morrasy, Albert Clayton ..... 2544 O, Lincoln
Morris, Llewelyn E ..... Carroll
Nash, Kenneth Earl ..... Benson

Nelson, Hermann Arthur ..... Oakland
Nelson, Irvin Andrew ..... Pilger
Nelson, Otto Clarence ..... Scandia, Kansas
Nye, Homer LeRoy ..... Lexington
Pease, Harry Allen ..... Farragut, Iowa
Person, Ernest Theodore ..... Holdrege
Pierce, John Henry ..... Atlanta
Rees, David ..... Carroll
Reid, Andrew Joseph ..... Brooklyn, New York
Riggs, George Burton ..... Shubert
Ritchie, Ruth Harriet ..... Seward
Schneider, Ernest ..... Poole
Schobert, Benjamin Lyman ..... Papillion
Schoenbeck, Walter Oscar ..... Odell
Soukup, Frank S ..... Fremont
Stephenson, Ray ..... Clay Center
Studley, Russell Alger ..... Creston
Swanson, Edwin Clarence ..... Stromsburg
Tietze, Ernest Elem ..... Holbrook
Urban, Frank ..... Newboro
Vogel, Percy Godfrey ..... Florence
Webster, Chester Allen Arthur ..... Gibbon
Weyant, Merle Ethel ..... 1439 No. 25th, Lincoln
Whitmore, Ralph Brown ..... Elgin
Wilcox, Guy Emerson ..... Grant
Wilson, Mabel Agnes ..... Douglas
Wilson, Vera Bee ..... Raymond
Young, Carl Stanley ..... R. No. 4, Lincoln

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1911/12

UNIVERSITY OF ILLINOIS
JUN 19 1911
PRESIDENT'S OFFICE

UNIV. OF ILL.
REGISTRAR'S
OFFICE

Series XVI No. 6

# Bulletin of The University of Nebraska

## ANNUAL CATALOG

OF THE

# COLLEGE OF AGRICULTURE

## ANNOUNCEMENT
## 1911-1912

Published by the University April 27, 1911
LINCOLN, NEBRASKA

The Bulletin of the University of Nebraska is published bi-weekly during the month of April, exclusive of the first week, and monthly in May, June and November of each year by the University of Nebraska. Application made for entry at the Post-Office at Lincoln, Nebraska, as second-class matter under Act of Congress July 16, 1894.

## COLLEGES AND SCHOOLS OF THE UNIVERSITY

The University of Nebraska comprises the following colleges and schools:

The Graduate College
The College of Arts and Sciences, including the School of Fine Arts
The Teachers College, including the Teachers College High School
The College of Engineering
The College of Agriculture, including the School of Agriculture
The College of Law
The College of Medicine, including the School of Pharmacy

The Nebraska Agricultural Experiment Station, the Experimental Substations at North Platte, Valentine and Scottsbluff and the Farmers' Institutes are under the supervision of the Board of Regents of the University. The Lincoln Dental College has a contract with the University under which the sciences necessary for the degree in dentistry are taught at and by the University.

For separate catalogs or information regarding any of the above colleges or schools, address

THE REGISTRAR,
THE UNIVERSITY OF NEBRASKA,
Lincoln, Nebraska.

## THE UNIVERSITY YEAR

The regular session of the University embraces thirty-nine weeks, beginning the third Tuesday of September and is divided into a first and a second semester. A summer session of eight weeks immediately follows the close of the second semester class work. Instruction is offered from September to August.

*First Semester, 1911-1912, September 19 to February 2
*Second Semester, 1911-1912, January 29 to June 13
Summer Session, June 5 to July 28, 1911

Registration in the summer session differs somewhat in conditions from that in the regular semestral sessions. To enter any session, one must be able either to present the minimum admission requirements to the University or to meet the conditions for "Adult Special" registration.

*Final examinations for the first semester, entrance examinations and registration for the second semester are held during the same week. In June, registration for the summer session begins during the period of the final examinations of the second semester.

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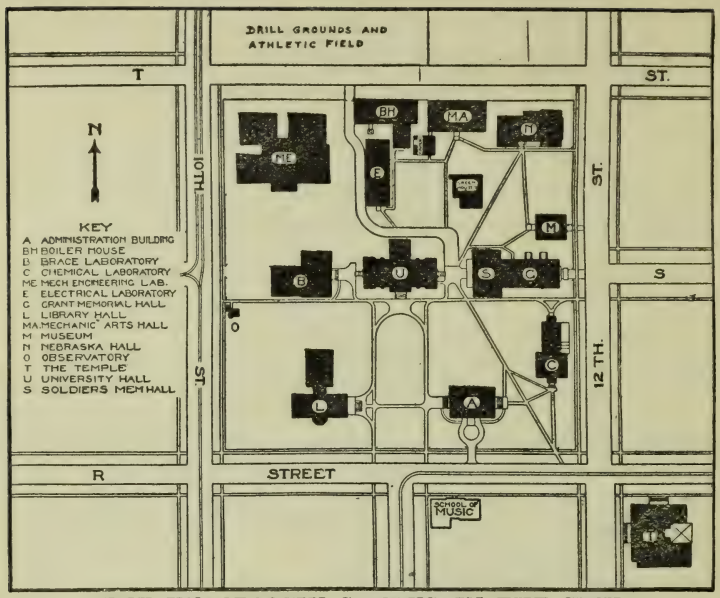
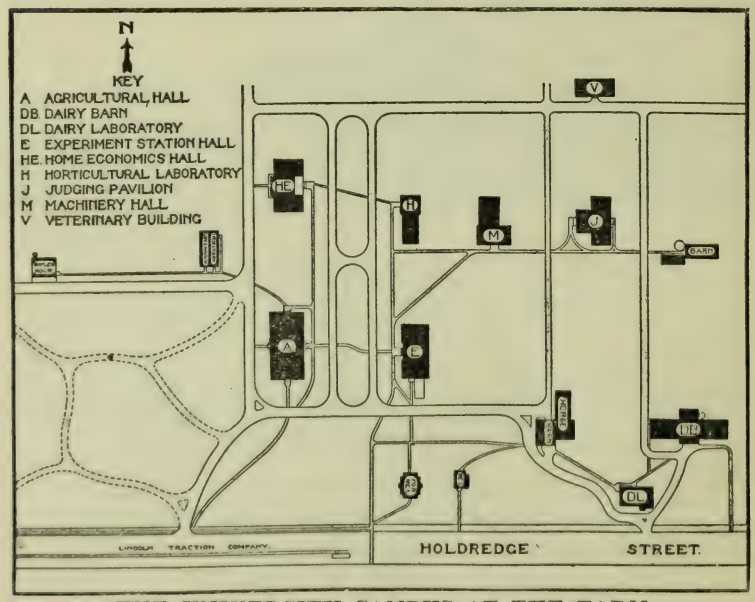



THE UNIVERSITY CAMPUS IN THE CITY




THE UNIVERSITY CAMPUS AT THE FARM

## CALENDAR FOR THE COLLEGE OF AGRICULTURE

| | | |
|---|---|---|
| **1911** | | |
| September 19 | Tuesday | First Semester begins. |
| September 19-23 | Tuesday-Saturday | Entrance examinations and registration. |
| September 23 | Saturday, 8 p. m. | University reception to all students. |
| September 26 | Tuesday, 11 a. m. | Opening address by the Chancellor. |
| *October 30 | Monday | School of Agriculture, 1st term begins. |
| November 29 | Wednesday, 12 m. | Thanksgiving recess begins. |
| December 2 | Saturday, 12 m. | Thanksgiving recess ends. |
| December 12 | Tuesday | Regular meeting of the Board of Regents. |
| December 20 | Wednesday, 6 p. m. | Christmas holidays begin. |
| **1912** | | |
| January 2 | Tuesday, 8 a. m. | Christmas holidays end. |
| Jan. 29-Feb. 2 | Monday-Friday | First semester examinations. |
| Jan. 30-Feb. 3 | Tuesday-Saturday | Entrance examinations and registration for the second semester. |
| February 5 | Monday | Second semester classes begin. School of Agriculture, 2d term begins. |
| February 15 | Thursday | Charter Day. A holiday. Regular meeting of the Board of Regents. |
| March 18 | Monday | Spring recess begins. |
| March 23 | Saturday, 12 m. | Spring recess ends. |
| April 9 | Tuesday | Regular meeting of the Board of Regents. |
| April 20 | Friday | School of Agriculture Commencement. |
| May 25 | Saturday | Senior Class Play. |
| May 29 | Thursday-Wed. | Second semester examinations. |
| June 5-June 10 | Wednesday-Monday | Cadet Encampment. |
| June 10 | Monday, 4 p. m. | Final recommendations by faculties for degrees. |
| June 3 | Monday | Registration for the Summer Session. |
| **Commencement Week, 1912** | | |
| June 9 | Sunday | Baccalaureate Sermon. |
| June 11 | Tuesday | Class Day. Regular meeting of the Board of Regents. |
| June 12 | Wednesday | Alumni Day. |
| June 13 | Thursday | Forty-first Annual Commencement. |
| September 17 | Tuesday | First Semester begins (1912-1913). |

*A separate catalog is published of the four-year course in the School of Agriculture

## OFFICERS OF ADMINISTRATION AND INSTRUCTION

SAMUEL AVERY, Ph. D., LL. D., Chancellor of the University.

JAMES STUART DALES, M. Ph., Secretary of the University.

PHILIP JOHN HARRISON, A. B., Registrar and University Publisher.

EDGAR ALBERT BURNETT, B. Sc., Dean of the College of Agriculture and Director of Experiment Stations. Agricultural Hall 203.

CHARLES EDWIN BESSEY, Ph. D., LL. D., Head Professor of Botany and Head Dean of the University.

LAWRENCE BRUNER, B. Sc., Head Professor of Entomology and Acting State Entomologist.

ALBERT EUGENE DAVISSON, A. B., Head Professor of Agricultural Education.

HOWARD REMUS SMITH, B. Sc., Head Professor of Animal Husbandry. Agricultural Hall 103.

*ARCHIBALD LOUIS HAECKER, B. Sc. A., Head Professor of Dairy Husbandry.

FREDERICK JAMES ALWAY, Ph. D., Head Professor of Agricultural Chemistry. Experiment Station Hall.

ROLLINS ADAMS EMERSON, A. M., Professor of Horticulture Horticultural Hall.

ROSA BOUTON, A. M., Professor of Home Economies. Home Economics Hall.

†FRANK J. PHILLIPS, M. S. F., Professor of Forestry.

EDWIN MEAD WILCOX, Ph. D., Professor of Agricultural Botany. Agricultural Hall 307.

LEON WILSON CHASE, B. Sc. in M. E., Professor of Agricultural Engineering. Machinery Hall.

EDWARD GERRARD MONTGOMERY, A. M., Professor of Experimental Agronomy. Experiment Station Hall.

CAPT. HALSEY E. YATES, 17th Inf., U. S. A., Commandant of Cadets and Professor of Military Science. Grant Memorial Hall.

WILLIAM PATTON SNYDER, A. B., M. S., Superintendent of North Platte Experimental Substation.

CHARLES WILLIAM PUGSLEY, B. Sc., Professor of Agronomy and Farm Management. Experiment Station Hall.

*Resigned.

†Deceased.

GEORGE EVERT CONDRA, Ph. D., Professor of Geograhpy and Economic Geology. University Hall 7.

JAMES HARRISON GAIN, M. D. C., Professor of Animal Pathology. Veterinary Hall.

VAL KEYSER, B. Sc., Superintendent of Farmers' Institutes. Agricultural Hall 205.

OLENUS LEE SPONSLER, A. B., Adjunct Professor in Botany and Forestry, and Acting Head of the Department of Forestry. Nebraska Hall 105.

HARRIET FOLGER, B. Sc., Associate Professor in Home Economics. Home Economics Hall.

JULIA EMMELINE LOUGHRIDGE, A. B., Assistant Principal of the School of Agriculture and Adjunct Professor of Mathematics. Agricultural Hall 204.

LAZELLE BRANTLEY STURDEVANT, A. M., M. D., Assistant Professor of Animal Pathology. Veterinary Hall.

MYRON HARMON SWENK, A. M., Assistant Professor of Entomology and Assistant State Entomologist. Experiment Station Hall.

ELLIS RAIL, B. Sc. A., Assistant Professor of Animal Husbandry. Agricultural Hall 104.

VERNON VILAS WESTGATE, A. M., Adjunct Professor of Horticulture. Horticultural Hall.

PERCY BONSFIELD BARKER, A. B., Adjunct Professor of Agronomy (Soils). Experiment Station Hall.

ROBERT FRANCIS HOWARD, B. S. in Agr., Adjunct Professor of Horticulture. Horticultural Hall.

ROBERT SAMUEL TRUMBULL, A. M., Adjunct Professor of Agricultural Chemistry. Experiment Station Hall.

WILLIAM LUTHER FRENCH, B. Sc., Adjunct Professor of Dairy Husbandry. Dairy Hall.

*G. HERBERT COONS, A. B., Adjunct Professor of Agricultural Botany.

FLORA BULLOCK, A. M., Adjunct Professor in English. Agricultural Hall 109.

ERWIN HOPT, B. Sc., Adjunct Professor in Agronomy (Crops). Experiment Station Hall.

CLAUDE KEDZIE SHEDD, B. Sc., Adjunct Professor of Agricultural Engineering. Machinery Hall.

GEORGE KONRAD KARL LINK, S. B., Adjunct Professor of Agricultural Botany.

ALVA ALDUS BAER, Instructor in Wood Work. Machinery Hall.
*GRACE GOLDENA DENNY, A. B., Instructor in Home Economics.
ELLA BRADFORD HARPER, A. B., Instructor in Home Economics. Home Economics Hall.
ORPHA NESBITT, B. Sc., Instructor in Home Economics. Home Economics Hall.
OSCAR WARNER SJOGREN, Instructor in Forge Work.
CHARLES BOSS LEE, B. Sc., Instructor in Animal Husbandry.
WILLIAM JACOB DUPPERT, M. S. F., Instructor in Forestry.
‡BESSIE EVELYN MERRILL, A. B., Instructor in Home Economics.
HELEN L. DAVIS, Instructor in Home Economics
MABEL HEDGES, A. B , Assistant in Home Economics Home Economics Hall.
GLAIDETH DENNY, A. B., Assistant in German and History. Agricultural Hall 204.
MINNIE M. NEWMAN, Assistant Instructor in English.
EDNA CLARA NOBLE, B. L., Library Assistant. Agricultural Hall.
SAMUEL McKELVIE, Lecturer in Swine Judging. Agricultural Hall 103.
MRS. VADA CLEGG VENNUM, Assistant Registrar, School of Agriculture. Agricultural Hall 207.

### Standing Committees of the Faculty

Course of Study—Professor Davisson (chairman), Professors Bouton, Bruner, Chase, Pugsley, Smith, Wilcox, and Mrs. Vennum (secretary.)
Farmers' Institutes—The Dean (chairman), Professors Smith, Pugsley, Keyser (secretary).
Schedule of Classes—Professor Chase (chairman), Professors Pugsley. Wilcox, the Registrar.

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*Resigned.
‡Appointed for 1910-1911 only.

## PURPOSE OF THE COLLEGE OF AGRICULTURE

The College of Agriculture was established by an act of the legislature of 1909, reorganizing the colleges within the University. The purpose of this college is (1) to provide thorough instruction in the technical agricultural sciences and (2) to aid in the promotion of agriculture through its secondary School of Agriculture, its Experiment Stations, and its Farmers' Institute work.

## GROUPS OF STUDY

**The Agricultural Group** meets the needs of those students who desire to make practical application of their education in the management of land or who wish to prepare themselves for the pursuit of scientific investigation along some line in agriculture, such as agricultural botany, agricultural chemistry, agronomy, animal husbandry, animal pathology, dairy husbandry, entomology, forestry, horticulture, and other technical subjects related thereto. This group should also appeal to those who desire to prepare themselves for teaching in high schools or in agricultural colleges and who desire special agricultural training to meet the demands of the schools requiring that instruction be given in agriculture. As a course in general education for students who expect to follow business pursuits or to continue still further the study of some technical agricultural subject, this course is offered as a suitable foundation. To those who desire an education which will put them in touch with the leading industrial activities of the state, and fit them to be leaders on the farm, the Agricultural course will also prove most efficient.

**Forestry Group.** This group is designed to guide the student in the selection of courses and is aimed to prepare men for either general or technical work in forestry. The sequence of the general or technical work in forestry. The sequence of the courses during the first three years is arranged to give a basis for a broad education and at the same time to give a good scientific foundation leading to the more technical courses in forestry. While the group is intended primarily for foresters, many of the courses may be taken by students in general collegiate work or by students specializing in other lines, who desire a knowledge of some particular line of forestry.

The **Home Economics Group** leads to the degree of Bachelor of Science. Besides those subjects which have to do especially with the home, it includes studies in science, language, history, and other branches affording a good general education while giving special efficiency in household arts

and sciences.* This department is housed in Home Economics Hall, situated on the University Farm. The hall is a three-story brick building, equipped to provide practical instruction in cooking, sewing, and general house work.

## FACILITIES FOR INSTRUCTION

To illustrate properly the work in the various departments in agriculture, the college is provided with a farm of 320 acres which is used for experimental purposes and to illustrate methods in farm practice, showing the effect of rotations and methods of treatment on the physical and chemical properties of the soil and on its productiveness. The department of Horticulture maintains an extensive orchard and garden for demonstrating horticultural methods and practices. The departments of Animal Husbandry and Dairy Husbandry keep extensive herds for instruction in types of farm animals. The agricultural plant, aside from lands, consists of eight main buildings and several barns and accessory buildings to complete the work and efficiency of the plant. Agricultural Hall is used for administration, library, and laboratories in Agricultural Botany. Experiment Station Hall furnishes laboratories for Soils, Entomology, and Agricultural Chemistry. The Judging Pavilion furnishes stock judging laboratories and grain judging laboratories, with exceptional facilities for work. The Agricultural Engineering building furnishes laboratories in forge work, wood work, and farm machinery. Horticultural Hall is devoted to laboratories and class rooms for horticultural instruction. Dairy Hall furnishes laboratories for instruction in buttermaking and cheesemaking, supplemented by a herd of exceptional efficiency to demonstrate the best dairy practice. Home Economics Hall furnishes laboratories for instruction in cooking and in household art. All of the technical departments giving instruction have excellent laboratory facilities and depend upon the laboratory method to give definiteness and efficiency to their instruction.

## ADMISSION TO THE COLLEGE OF AGRICULTURE

**Entrance Credits.** For admission to the freshman class in the College of Agriculture the candidate must present 30 entrance credits or "credit points;" that is, a total of 150 recitation hours. Conditional admission is permitted on a minimum of 24 points, or 120 recitation hours; but a student admitted conditionally must remove the conditions at the earliest

*For the University Teachers' Certificate in Home Economics, see department of Home Economics under "Courses of Instruction." Also, page 15.

possible opportunity. A degree will not be granted until all such conditions are removed.

**Required Subjects (17 points).*** Of the 30 points required for admission, 17 must be presented from the following subjects in the amount indicated; the time element is essential:

Algebra (through Simultaneous Quadratics and Logarithms), 1½ years, 5 hours a week ..... 3
Rhetoric and Literature, 2 years, 5 hours a week ..... 4
Geometry (plane), 1 year, 5 hours a week ..... 2
Language (ancient, modern), 3 years, 5 hours a week ..... 6
History (European), 1 year, 5 hours a week ..... 2
Physical Science (Physics), 1 year, 5 hours a week ..... 2†

**Optional Subjects (13 points).** In addition to the above required subjects, for which no substitutes are accepted, candidates for admission must present 13 points from the following optional subjects:

Agriculture, 5 hours a week ..... 1
‡Rhetoric and Literature, 1 year, 5 hours a week ..... 2
‡History, 2 years, 5 hours a week ..... 1 to 4
Language (ancient or modern), 4 years, 5 hours a week ..... 2 to 8¶
Natural Science (Zoology, Botany), 1 year, 5 hours a week, each .. 1 or 2
Physical Science (Chemistry), 1 year, 5 hours a week ..... 1 or 2
Physical Geography, ½ year, 5 hours a week ..... 1
Solid Geometry, ½ year, 5 hours a week ..... 1
Trigonometry (plane), ½ year, 5 hours a week ..... 1
Other subjects taught in an approved manner in an accredited secondary school (one each) ..... 6

**Entrance Without Examination.** All students who have completed the course in the School of Agriculture are admitted to the College of Agricul-

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*An "entrance credit" or "credit point" means the work of a class holding five recitations a week, of 40 to 50 minutes each, for at least eighteen weeks. In laboratory courses, a "credit point" means three recitations and two double periods of laboratory work (under the supervision of an instructor) each week for at least eighteen weeks.

†May be offered as a substitute for two points language.

‡Two additional points are allowed only to schools named by the Accredited Schools Committee.

¶The maximum is 6 in any one language except Latin wherein 8 may be offered.

ture without examination.* Young women graduating in Home Economics from the School of Agriculture are admitted to the Home Economics group of the College of Agriculture. An applicant presenting a certificate from an accredited secondary school, or academy is admitted without examination to any classes for which he is fully prepared. Any candidate for admission bringing credentials from a high school, college, or university not included in the list of schools accredited to this University must, upon making application, present his credentials to the Registrar and be prepared to take such examinations as are prescribed. A student desiring to ascertain whether or not he can be admitted to the first year without examination should apply to the Registrar for blank credential slips. When these are properly filled out and returned, he will be informed at once whether his credentials are or are not acceptable.

**Adult Special Students.** Students not candidates for degrees may register in the College of Agriculture without conforming to the entrance requirements. The admission of adult special students is permitted after consultation with and upon the recommendation of the Dean. Such students must pay all necessary fees. Upon fulfilling the entrance requirements, adult special students may register as regular students, and become candidates for the degree.

**Registration.** Registration in the College of Agriculture takes place during the first five days of each semester, from 9 a. m. Tuesday to 5 p. m. Saturday. To promote prompt registration, a registration fee of $3.00 is charged a student who, without good reason, fails to register within the days set aside for this purpose.† A like fee is charged for the re-registration when made necessary by the student's fault; any change whatever in a registration once made is regarded as a re-registration. A student changing from one college to another must pay a new matriculation fee of $5.00, and no student is allowed to make such a change without written permission to the Registrar from the Dean of each college concerned.

No student is allowed to change his group or drop any study for which he has been regularly registered without written permission from the Dean

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*Beginning with September, 1911, one year of language will be required from graduates of the School of Agriculture for admission to the College of Agriculture.

†Properly prepared students who are unable to enter at the beginning of the year are admitted later; but all students who can possibly do so are urged to be present at the beginning of the year, as students entering later are at much disadvantage, and cannot expect to finish the course within the minimum limit except by taking work in the Summer Session.

of the college. No regular student is permitted to register for less than twelve (12) hours nor more than eighteen (18) hours a semester without the Dean's permission. Students cannot attend classes for which they are not registered, and credit is not granted for studies pursued without registration. Any change in a student's residence must be immediately reported to the Registrar.

## FEES AND EXPENSES

**Fees.** All fees and charges are payable in advance to the Secretary of the University. No fees can be refunded to a student after the beginning of the fourth week from the date of his registration save for causes beyond the student's control. In the latter instances the refund can be made only upon written application to the Registrar, stating reasons, and presented at the time of withdrawal from a class or from the University. The schedule of fees in the College of Agriculture is as follows:

Matriculation (paid only on first registration) ..... $5.00
Being a statutory fee, this cannot be refunded except when collected through error.

Non-resident (charged to each person not a resident of the state), each semester ..... 15.00

Incidental, each semester ..... 3.00

Library (charged to each student who does not pay a laboratory fee), each semester ..... 1.00

Special registration (for late registration or re-registration) ..... 3.00

Special examination, each course ..... 1.00

Diploma, first degree ..... 5.00

Diploma, advanced degree ..... 10.00

Additional Diploma fee if degree taken *in absentia* ..... 10.00

Certificate ..... 1.00

### LABORATORY FEES

Agricultural Chemistry—Course 1, $3; 2, $4; 3, $1; 4, $2.

Agricultural Engineering—Course 1, 2, 11, $3; 3, 5, 6, $1; 4, 18, $2; 9, 10 12, 16, $4.

Botany—Courses 1, 2, 21, 22, 25, 35, 36, 37, $2; 13, 14, $1; 6, 19, 20, $3.

Chemistry—Courses, 1, 2, $5; 14, $8; 3, $10.

Civil Engineering—Courses 5, 30, $3.

Entomology—Courses 1, 2, $2.

Geography—Courses 1, 2, $1.

Geology—Course 1, $1.

Home Economics—Courses 1, 2, 7, 8, 11, 12, 15, 16, $2; courses 3, 4, $3; courses 5, 6, $5.

Physics—Courses 1a, 2a, $1.

Physiology—Courses 1, 2, $5.

**Expenses.** In Lincoln, board and lodging may be secured in private families from $3.00 to $5 a week. There are also numerous student clubs. The Young Men's Christian Association and The Young Women's Christian Association of the University keep lists of boarding places. The Young Men's Christian Association of the University also maintains under the direction of the Registrar an employment bureau, the services of which are free to all students. In a city the size of Lincoln there are many opportunities for students to defray at least a part of their expenses. The University does not, however, guarantee employment.

## REQUIREMENTS FOR GRADUATION

**University Credits.** For the degree of Bachelor of Science, 125 University "credit hours" are required.* No student is recommended for a degree who is not within 18 hours of this requirement at the beginning of his last semester. All graduates of the School of Agriculture are admitted to the College of Agriculture without examination. No such graduate shall be permitted to take a degree from the College of Agriculture who does not have at least the equivalent of four credit points in Language, two points of which may be accepted as entrance credit.

**Required Subjects.** Each candidate for the degree of Bachelor of Science in the College of Agriculture must complete the following subjects:

| | Hours |
|---|---|
| Modern Language (French or German) | 10 |
| Biology (Botany, Entomology or Zoology) | 10 |
| Physical Science (Chemistry or Physics) | 8 |
| Biological, Physical, or exact Science | 10 |
| English (Rhetoric 1, 2, and 6 hours of Rhetoric or English Literature) | 10 |
| History, Political Science, Philosophy or Sociology | 6 |
| Military Science for men or Physical Training for women | 4 |
| Total, | 58 |

**Science Requirement.** No student will be granted a degree from the College of Agriculture who has completed less than 60 hours of science, which may include Agriculture or Home Economics. Students selecting the Agricultural group will be required to complete 40 hours of agricultural subjects, to be taken in not less than three departments. Students selecting the Forestry group will be required to complete 40 hours of Botany and Forestry. Students selecting the Home Economics group will be required to complete 30 hours of Home Economics.

*A course receives one "credit hour" for each one-hour recitation or lecture and two-hour preparation or laboratory period it demands for each of the eighteen weeks of a semester.

**Military Drill Required.** Four hours of military science (courses A1, A2, AA1, AA2) are required of all men students. Only credibly attested physical disability, or conscientious scruples (on the part of parent in case of a minor), are accepted as excusing from the requirement in military science. Those excused for conscientious scruples are required to do work in Physical Education equivalent in amount. Unless excused or reprieved by the Chancellor, each undergraduate man must fulfill this requirement in his freshman and sophomore years. A man excused from this requirement (whatever the reason) must still, in order to graduate, obtain the full number of hours credit required of other candidates for the degrees sought. Thorough drill elsewhere than at the University may, as in the case of any other study, on evaluation, be credited to a student in lieu of a like amount of military science at the University. Such credit by commutation, however, in no case exceeds a total of four hours.

**Major Subjects.** Not later than the beginning of his second year each student in the College of Agriculture must select some one department of the college in which he will take a major of not less than 16 hours nor more than 35 hours.

**State Teachers' Certificate.** Graduates of the College of Agriculture having taken a major in agriculture or the Home Economics group (including Courses 13 and 14), and having taken in addition thereto eight hours in Professional Education and who have devoted a half-year to the observation and practice of teaching, shall receive the First Grade State Teachers' Certificate, which qualifies them as supervisors and teachers in their chosen subject in the public schools of Nebraska.

**Advisers.** At the time of his first registration each Freshman student in the College of Agriculture is assigned by the Dean to some member of the Faculty, who becomes his adviser during the Freshman year. When, at the beginning of his second year, a major subject is chosen, the head of the department in which the major work is taken becomes the adviser of the student until the time of his graduation. The dean of the college constitute a head adviser for each student within the college. The Adviser to Women is a special adviser to all women students in the college.

**Absence or Withdrawal.** A leave of absence for a short time may be granted a student by the Dean. This leave is merely a justification for absence and not an excuse from any work. If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a semester, the Registrar grants him permission to do so. Students in good standing who are not minors are given honorable dismissal from the University at their own request; minors, at the request of their parents or guardians.

## ORDER OF COURSES IN THE GROUPS OF STUDY

### THE AGRICULTURAL GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| *Agricultural Subjects | 3 | 3 |
| Biology (Botany,† Entomology or Zoology‡) (A and S) | 3 | 3 |
| Chemistry 1, 2, (A and S)‡ | 2 | 2 |
| French or German (A and S)‡ | 5 | 5 |
| Rhetoric 1, 2 (A and S)‡ | 2 | 2 |
| Military Drill | 1 | 1 |
| | 16 | 16 |
| **SECOND YEAR** | | |
| *Agricultural Subjects | 3 | 3 |
| French or German (if four points foreign language have not been offered for entrance on admission to the college), or Natural, Physical or Exact Science | 5 | 5 |
| Rhetoric 5 and 6 or English Literature (A and S)‡ | 3 | 3 |
| Chemistry 3 or Physics 1*a* and 2*a* (A and S)‡ | 5 or 4 | |
| Biology (Botany, Entomology or Zoology) (A and S)‡. | | 4 |
| Military Drill | 1 | 1 |
| | 17 or 16 | 16 |
| **THIRD YEAR** | | |
| *Agricultural Subjects | 7 | 7 |
| Electives | 6 | 5 |
| History, Political Economy or Philosophy (A and S)‡ | 3 | 3 |
| | 16 | 15 |

*The "Agricultural Subjects" include Agricultural Botany, Agricultural Chemistry, Agricultural Engineering, Agricultural Geology, Agronomy, Animal Husbandry, Dairy Husbandry, Forestry, Geography, Horticulture, Economic Entomology, Agricultural Economics.

†Graduates of the School of Agriculture shall take Botany 3 and 4; others shall take courses 1 and 2.

‡Required courses not given in the College of Agriculture are marked with the initials of the college in which they are offered; e. g., (A and S) indicates that the subject is offered in the College of Arts and Sciences.

| FOURTH YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| †Agricultural Subjects | 7 | 7 |
| Electives | 8 | 8 |
| | 15 | 15 |

## FORESTRY GROUP

| FIRST YEAR | | |
|---|---|---|
| Botany 1, 2 | 3 | 3 |
| German 1, 2 (A and S)* | 5 | 5 |
| Geography 1, 2 | 2 | 2 |
| Chemistry 1, 2 (A and S)* | 2 | 2 |
| Rhetoric 1, 2 (A and S)* | 2 | 2 |
| Forestry 1, 2 | 2 | 2 |
| Military Drill | 1 | 1 |
| | 17 | 17 |

| SECOND YEAR | | |
|---|---|---|
| Botany 13, 14 | 2 | 2 |
| Rhetoric 5, 6 (A and S)* | 3 | 3 |
| Entomology 1, 2 | 3 | 3 |
| Physics 1*a*, 2*a* (A and S)* | 2 | 2 |
| Dendrology (Botany 35, 36) | 2 | 3 |
| Mathematics 1 (A and S)* | 5 | |
| †Lettering and Drawing (Applied Mech. 10) | | (2) |
| Military Drill | 1 | 1 |
| | 18 | 14 |

| THIRD YEAR | | |
|---|---|---|
| Botany 19, 20 | 3 | 3 |
| Surveying 5, 5*a*, 30 (E)* | 4 | 3 |
| Botany 6 (A and S)* | | 3 |
| Soils (Agronomy 7, 9) | 4 | |
| Forestry 7, 8 | 2 | 2 |
| Political Economy 7, 1 (A and S)* | 3 | 3 |
| Geography 4 | | 2 |
| | 16 | 16 |

| FOURTH YEAR | | |
|---|---|---|
| Botany 21, 22 (A and S)* | 3 | 3 |

*See third note at bottom of page 16.

†See foot-note (†) on page 18.

| | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Study of Woods (Botany 37) (A and S)* | 3 | |
| Timber Physics (Applied Mech. 20) (E)* | | 3 |
| Forestry 11, 12 | 3 | 3 |
| Forestry 15, 16 | 3 | 3 |
| Geology 1 (A and S)* | 3 | |
| †Zoology 1 (A and S)* | (3) | |
| †Forest Zoology 32 (A and S)* | | (2) |
| †Electives | | (3) |
| | 15 | 12 |

FIFTH YEAR

| | | |
|---|---|---|
| Forestry 17 | 2 | |
| Forestry 19, 20 | 3 | 3 |
| Forest Mycology (Botany 25) | 2 | |
| Forest Entomology 11 | | 2 |
| Rhetoric 13, 14 (A and S)* | 3 | 3 |
| Forestry 21, 22 (Thesis) | 2 | 2 |
| †Public Lands (American History 10) (A and S)* | | (2) |
| ‡Forestry 23, 24 | (2 to 4) | (2 to 4) |
| ‡Forestry 25, 26 | (2 to 4) | (2 to 4) |

## HOME ECONOMICS GROUP

FIRST YEAR

| | | |
|---|---|---|
| Home Economics 1, 2 (Sewing and Design) | 3 | 3 |
| Rhetoric 1, 2 (A and S)* | 2 | 2 |
| Chemistry 1, 2 (A and S)* | 2 | 2 |
| Language, Ancient or Modern (A and S)* | 5 | 5 |
| Botany, or Zoology (A and S)* | 3 | 3 |
| Physical Training | 1 | 1 |
| | 16 | 16 |

*See third note at bottom of page 16; (E) refers to the College of Engineering.

†These subjects are elective, and on consultation with the head of the department may be selected towards the 125 hours of credit necessary for graduation.

‡Work in one of these courses or an equivalent along some other forestry line is required. The number of hours credit may be arranged by consulting the head of the department.

FIRST YEAR FOR STUDENTS WHO HAVE NO ENTRANCE CREDIT IN CHEMISTRY

| | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Home Economics 1, 2 (Sewing and Design) | 3 | 3 |
| Rhetoric 1, 2 (A and S)* | 2 | 2 |
| Physical Training | 1 | 1 |
| Chemistry A, B, (A and S)* | 3 | 3 |
| Language (Ancient or Modern) (A and S)* | 5 | 5 |
| Agricultural Engineering 5, 6 (Wood-work, Interior Finish) | 1 | 1 |
| | 15 | 15 |

SECOND YEAR

| | | |
|---|---|---|
| Home Economics 3, 4 (Foods: Selection and Preparation) | 3 | 3 |
| Chemistry 3 (Organic) (A and S)* | 5 | |
| Chemistry 14 (Food and Sanitary) (A and S)* | | 5 |
| Physiology 1, 2 (A and S)* | 2 | 2 |
| English Literature 1, 2 (A and S)* | 3 | 3 |
| Physical Training | 1 | 1 |
| Physical Education 6 (Emergencies—First Aid) | | 1 |
| | 14 | 15 |

THIRD YEAR

| | | |
|---|---|---|
| Home Economics 5, 6 (Advanced Cookery) | 3 | 3 |
| Home Economics 7, 8 (Industrial Art) | 3 | 3 |
| Bacteriology 2*a* (A and S)* | | 2 |
| †Philosophy, Sociology, or Political Economy (A and S)* | 3 | 3 |
| Electives | 7 | 5 |
| | 16 | 16 |

FOURTH YEAR

| | | |
|---|---|---|
| Home Economics 9, 10 (Household Administration) | 2 | 2 |
| Education 4 (Child Study) (A and S)* | 3 | |
| Greek 40 (Interpretation of Art) (A and S)* | | 2 |
| History | 3 | 3 |
| Electives | 8 | 8 |
| | 16 | 16 |

*See third note at bottom of page 16.

†Philosophy 1 and 2 required of candidates for the teachers' certificate. See page 15.

## COURSES OF INSTRUCTION

Students are advised to consult the heads of departments before registering.

For courses that may be chosen to apply as "Electives" see the general "Courses of Instruction" of the College of Arts and Sciences, the College of Engineering, and the Teachers College.

Courses included between brackets are not given in 1911-1912.

### AGRICULTURAL BOTANY

Professor Wilcox, Adjunct Professor Link

#### GENERAL INFORMATION

The office, laboratories and lecture room are located in Agricultural Hall. For use in the lectures, the department has a very extensive collection of lantern slides, charts and other illustrative material. An extensive pathological herbarium and collection of economic plants are being developed as rapidly as possible. The large private library of the professor of Agricultural Botany, particularly complete in phytopathology, is available for the use of advanced students. A greenhouse has recently been arranged and equipped for experimental work in physiology and pathology.

In connection with the Nebraska Seed Laboratory, maintained in cooperation with the United States Department of Agriculture, advanced students may secure practical training in seed testing. A limited number of advanced students with proper training can be offered exceptional opportunities for research work in phytopathology. In many cases it is possible for such students to receive compensation for work done in connection with problems being investigated by the department.

#### GRADUATE WORK

This department is especially prepared to offer graduate work in phytopathology and phytophysiology. To successfully undertake research work in this subject, students should have a broad training in general botany, chemistry and zoology; should be able to read French and German and should have taken Agricultural Botany 1, 2 and 3, 4. Before registration students should consult the head of this department.

#### FOR UNDERGRADUATES AND GRADUATES

1. **Elementary Plant Pathology**—A broad survey of the development and present condition of our knowledge of plant disease. Special attention will be given to diseases having their origin in malnutrition and unfavorable chemical and physical factors. The most typical and important diseases of our leading cultivated plants will be described in some detail. The laboratory work will acquaint the student with the current technique,

including the preparation and use of culture media, the establishment of pure cultures and artificial inoculation. Three hours lecture. Six hours laboratory. Three hours credit. Students are advised to take General Botany 15, 16 and 19, 20 before or with this course. Professor Wilcox

2. **Elementary Plant Pathology**—1 continued. Second semester.

3. **General Plant Pathology**—Prerequisite: Agricultural Botany 1, 2. An advanced course of lectures designed to furnish such a broad working basis as to enable one to engage in original research in plant pathology. The following are some of the subjects to be discussed: the physiology and cytology of resistance and immunity, origin of parasitism, specialization, epidemics and climatic factors, etc. Two hours lecture. Four hours reading. Two hours credit. First semester. Professor Wilcox

4. **General Plant Pathology**—3 continued. Second semester

5. **Seed Testing**—Methods of seed analysis, including quantitative and qualitative methods of making purity determinations. Identification of foreign seeds. Liability and purity tests of the seeds of the principal cereals, forage crops, and horticultural crops. One hour lecture. Six hours laboratory. Three hours credit. First semester. Professor Wilcox

6. **Seed Testing**—5 continued. Second semester.

7. **Forest Plant Pathology**—A special course designed to furnish information as to the principal diseases of forest trees. Three hours lecture. Four hours laboratory. Three hours credit. First semester.

Professor Wilcox

FOR GRADUATES

9. **Problems in Plant Pathology**—Prerequisite: Agricultural Botany 1, 2. Assigned problems in plant pathology. Laboratory work with hours for consultation. Two to five hours credit. First semester.

Professor Wilcox

10. **Problems in Plant Pathology**—9 continued. Second semester.

11. **Problems in Plant Physiology**—Assigned problems in the nutrition, growth, irritability or reproduction of plants. Laboratory work with hours for consultation. Two to five hours credit. Professor Wilcox.

12. **Problems in Plant Physiology**—11 continued. Second semester.

SCHOOL OF AGRICULTURE COURSES

A. **Elementary Agricultural Botany**—This course offers a general introduction to the science of botany. The students will become acquainted with the general morphology of the flowering plants. This will be accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. One hour lecture. Four hours laboratory. Three hours credit. First semester.

Professor Wilcox, Adjunct Professor Link

B. **Elementary Agricultural Botany**—Elementary study of types of plants selected as far as possible with reference to their economic report in agriculture. One hour lecture. Four hours laboratory. Three hours credit. Second semester. Professor Wilcox, Adjunct Professor Link

C. **Elementary Plant Physiology**—An elementary study of the growth, nutrition, irritability and reproduction of plants with special reference to the application of these facts to plant culture. Two hours lecture. Two hours laboratory. Two hours credit. First semester.

Professor Wilcox, Adjunct Professor Link

D. **Elementary Plant Pathology**—An elementary study of the more common diseases of cultivated plants; the best methods of controlling these by spraying, proper methods of cultivation, use of resistant varieties, etc., will be discussed. Two hours laboratory. Two hours lecture. Second semester. Professor Wilcox, Adjunct Professor Link

E. **Home Economics Botany**—This course offers a general introduction to the science of botany. The students will become acquainted with the general morphology of the flowering plants. This will be accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. One hour lecture. Four hours laboratory. Three hours credit. First semester. Adjunct Professor Link

F. **Home Economics Botany**—An elementary study of the bacteria, yeasts and fungi in the home. One hour lecture. Four hours laboratory. Three hours credit. First semester. Adjunct Professor Coons

## GENERAL BOTANY

Head Professor Bessey, Assistant Professor Pool, Aduuct Professor Sponsler, Miss Walker

1. **General Botany**—Introduction to structure of plants (cells, tissues, tissue systems). General morphology, physiology, and classification of representative species, including blue-green and green algæ. Three hours lecture. Six hours laboratory. Three hours credit. First semester.

Head Professor Bessey, Miss Walker

2. **General Botany**—The general morphology, physiology and classification of representative species of brown algæ to flowering plants. Three hours lecture. Six hours laboratory. Three hours credit. Second semester. Head Professor Bessey, Miss Walker

13. **Flowering Plants**—Principles of the classification of Monocotlyedons and their particular application to the grasses. Two hours lecture. Four to twenty hours laboratory work in the field and herbarium. Two to six hours credit. First semester.

Head Professor Bessey, Assistant Professor Pool

14. **Flowering Plants**—Principles of the classification of Dicotyledons and their particular application to the Composites. Otherwise as in course 13. Second semester.

Head Professor Bessey, Assistant Professor Pool.

15. **Mycology**—A study of the fungi and of Mycological literature; classification; physiology, life history, parasitism, symbiosis, heteroecism, mycorhiza, laboratory and field work. Three lectures, eight hours laboratory. Three hours credit. First semester.

Assistant Professor Pool, Miss Walker.

16. **Mycology**—The role of fungi in the production of plant diseases, bacterial diseases, epidemics, physical and climatic factors, pathological technique. Three lectures, eight hours laboratory. Three hours credit. Second semester. Assistant Professor Pool, Miss Walker.

19. **Plant Physiology**—An introductory study of the processes and functions of plants. Including imbibition; osmosis, absorption; the relation of the soil and of solutes to the plant; the movement of substances in the plant body; transpiration; guttation; bleeding; maintenance and bodily form; turgor; secretion, waste products. Three hours attendance. Six hours laboratory. Three hours credit. First semester.

Assistant Professor Pool

20. **Plant Physiology**—Photosynthesis; the question of the manufacture and assimilation of food; stomatal relations; the nitrogen cycle; the storage and digestion of foods; respiration and fermentation; growth and movement with special reference to the influence of external factors upon these phenomena; irritability; stimulus and response; correlation; reproduction of plants; death. Three hours attendance. Three hours credit. Six hours laboratory. Second semester. Assistant Professor Pool

21. **Plant Ecology**—The relation of plants to their environment; adaptation; alternation and zonation; factors of the habitat; use of ecological instruments. Two lectures, six hours laboratory. Two hours credit. First semester. Assistant Professor Pool

22. **Plant Ecology**—Mostly field work, with detailed studies and accurate observations. Two lectures, six hours laboratory or field work. Two hours credit. Second semester. Assistant Professor Pool

25. **Forest Mycology**—A study of the fungi which attack forest trees: the role of fungi in the decay of timber. Two lectures, six hours laboratory or field work. Two hours credit. First semester.

Assistant Professor Pool

35. **Dendrology**—Brief review of the morphology and physiology of the tree. Forest regions and forest types. Distribution. Economic importance. Detailed study of dendrological and silvical characteristics

of about one hundred important forest trees. Two hours attendance. Four hours laboratory and field work. Two hours credit. First semester. Adjunct Professor Sponsler

36. **Dendrology**—35 continued. Three hours attendance. Six hours laboratory and field work. Three hours credit.

37. **The Study of Woods**—Study of structure of important woods leading to identification and relation of structure to strength, weight, shrinkage, and other physical properties. Primarily for foresters; engineers may elect this course for two hours credit after consultation with the instructor. Prerequisites for foresters: Botany 6. Two hours attendance. Six hours laboratory. One hour reading. Three hours credit. First semester. Adjunct Professor Sponsler

## AGRICULTURAL CHEMISTRY

Head Professor Alway, Adjunct Professor Trumbull

All courses in the department are given in Experiment Station Hall.

The work offered by the Department of Agricultural Chemistry is either research or direct preparation for research. In general only graduates, or undergraduates in their senior year, are prepared for this work, which is largely individual and the nature of which depends largely upon the student's previous work in chemistry, geology, physics and soils.

### UNDERGRADUATE WORK

Courses 2, 4, 5, 6, and 8 are open to undergraduates who previously have had sufficient training. On account of the varied nature of the problems presenting themselves in agricultural chemistry students are urged to acquire as thorough a training as possiple in inorganic, organic, analytical, and physical chemistry before specializing in this department. Only those whose training in pure chemistry has been thorough may hope to succeed in dealing with problems in agricultural chemistry.

### GRADUATE WORK

Courses 2, 4, 5, 6, and 8 outlined below are primarily for graduates. In addition to these courses, graduate students may select problems in the chemistry of plants. The nature of the problem assigned to any particular student depends both upon his previous training and upon the lines of investigation in progress at the Experiment Station.

### PRIMARILY FOR GRADUATES

2. **Analysis of Agricultural Products**—A course in the quantitative analysis of grain, flour, fruit, dairy products and fodders. Prerequisite: courses 1, 2, 3, 7, and 8 in Chemistry, or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester. Head Professor Alway

4. **Analysis of Soils and Fertilizers**—A course in the quantitative chemical analysis of soils and fertilizers. Prerequisite: courses 1, 2, 3, 7, and 8 in Chemistry, or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester.

Head Professor Alway

5. **Research in the Chemistry and Physics of Soils**—The investigation in the field, in the laboratory, or in both, of some problem in soil chemistry or soil physics. Prerequisite for undergraduates: courses 7, 8, 9, and 10 in Agronomy. Two to five hours credit. First semester.

Head Professor Alway

6. **Research in the Chemistry and Physics of Soils**—5 continued. Second semester.

8. **Chemical and Physical Properties of Soils**—An advanced course on the chemical composition and physical properties of soils. This course is open to only those who have already taken courses 5 or 6 or who are taking course 6. Three hours credit. Second semester.

Head Professor Alway

SCHOOL OF AGRICULTURE COURSES

A. **Elementary Agricultural Chemistry**—General principles of chemistry. Special emphasis upon chemistry of agriculture. Three hours credit. First semester. Adjunct Professor Trumbull

B. **Elementary Agricultural Chemistry**—A continued. Second semester.

## AGRICULTURAL EDUCATION

Head Professor Davisson

1. **Agricultural Economics**—Beginning by calling attention to the fact that Agricultural Economics consists in applying the principles of general economics to the production, distribution, and consumption of agricultural wealth, the course deals with: (1) The factors of agricultural production; the economic properties of the factors of production; the guiding principle in the organization of the farm; the organization and size of the farm; the forces and conditions which determine the prices of agricultural products; distribution of wealth with especial reference to the rent of farm land and to the conditions which enable farmers to save from their earnings; the principles to be followed in estimating the value of farm land and equipment. (2) All conditions which contribute to the efficiency of labor are considered; these include careful consideration of those things which must characterize rural environment in order that the health of the dwellers therein may be assured and their strength be

of that quality so essential to him who works on the farm; the mental qualities which must be looked for in farm laborers and what sort of educational material must be provided in order that ideal mental qualities may be induced; agricultural education is discussed as a means by which the efficiency of those who work on the farm may be increased; how the principles of division of labor may be used on the farm is given careful treatment. The systems of distribution by which farm labor may be reimbursed for the sacrifices made are discussed with a view to determining whether cooperation between employer and laborer is an advantage to agricultural promotion or the contrary. (3) The law of diminishing returns from the land is discussed under the eight topics usually assigned by Economists as a means by which its operation may be in a measure prevented; the connection between it and the Law of Malthus is emphasized and here again agricultural education is discussed with reference to its necessity for people in general in order that the proper foundations of an enduring civilization may be laid. (4) The last general subject to be considered is distribution. The systems of distribution are carefully defined and the student is led to determine which in his opinion is the best. The marketing of farm products is given careful consideration. Whether agricultural products should find a home market or an international one is given detailed discussion. The ultimate system of distribution and of agricultural industry that must be adopted in order that the highest agricultural development may take place is considered as carefully as time will permit. (5) Rural sociology is investigated and all phases of rural life studied for the purpose of giving the student an adequate notion of what conditions now prevail in rural communities, and of what should be done in order to improve and make them ideal. Senior year. Second semester. Three hours attendance. Three hours credit.

2. **Agricultural Pedagogy**—The subject matter which characterizes the various subjects for instruction in agriculture is given careful consideration, the first purpose being to give the student, even though he has not taken all the subjects known as agricultural, a general concept of what agricultural education means. Each subject is then taken up and discussed with the view of determining its educative value. In this portion of the subject the student must become familiar with the elementary terms used in educational psychology. The best methods of imparting instruction in agricultural subjects to rural and to high school students are then considered. The knowledge which should precede the study of every agricultural subject is carefully discussed, for too often attempts are made by teachers in rural schools to give agricultural instruction without having built a proper foundation. The time which should be devoted to agri-

culture in the rural schools and in the high school and what materials can best be used for instruction are discussed, and an attempt is made to formulate a rational system of instruction which will, with the ordinary scientific subjects of the high school, constitute an organic whole. Senior year. First semester. Two hours attendance. Two hours credit.

## AGRICULTURAL ENGINEERING

Professor Chase, Adjunct Professor Shedd, Mr. Baer, Mr. Sjogren.

1. **Farm Machinery***—The practical study of all lines of agricultural implements, tillage, grading, seeding, harvesting, threshing and fertilizing machinery. One hour attendance. One hour preparation. Four hours laboratory. Two hours credit. First semester.

Adjunct Professor Shedd

2. **Farm Motors***—The practical study of farm motors, the horse, windmill, steam boilers, steam engines, traction engines, gasoline engines, electric motors. One hour attendance. One hour preparation. Four hours laboratory. Two hours credit. Second semester.

Adjunct Professor Shedd

3. **Rural Architecture**—The laying out of farms, the study of houses, barns, granaries, sheds, fences, equipment, etc. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. First semester. Professor Chase

4. **Farm Drainage and Rural Highways**—A study of methods of drainage, estimates, laying out drainage systems, etc. A study of the highways of Nebraska, construction and reconstruction, haulage, and highway laws. The first half of the time of this course is given to drainage, and the second to highways. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. Second semester.

Professor Chase, Mr.————

5. **Wood Work and Interior Finishing***—Practice at the bench with light carpenter tools and the care of edged tools for the home. Work in the construction of furniture, painting, oiling, and finishing the same. Instruction in the planning of the home, the designing, selection and care of the interior finish. One hour attendance. Two hours practice. One hour credit. For women only. First semester. Mr. Baer

6. **Spraying Machinery***—The designing of spraying outfits, practice with the gasoline engine, mixers and pumps and a study of nozzles. Three hours laboratory. One hour credit. First semester.

Professor Chase

7. **Research Work in Rural Architecture, Farm Drainage and Rural Highways**—The wide range of these subjects offers a great field of original

investigation: drainage, water supplies, heating, fencing, building materials, sewage, road construction, etc. Prerequisite: Courses 3 and 4. From six to fifteen hours laboratory or reading. From two to five hours credit. Professor Chase, Adjunct Professor Shedd

8. **Research Work in Farm Machinery, Farm Motors and Farm Equipment**—The large equipment of machinery in the department gives an excellent opportunity for testing both in the laboratory and in the field, standardizing, traction tests, calibration and economic tests of both farm machinery and farm motors. Prerequisite: Courses 1 and 2. From six to fifteen hours laboratory or reading. From two to five hours credit. Professor Chase, Adjunct Professor Shedd

9. **Carpentry***—Practice with the care, use and adjustment of tools, exercises in Bench Work, Farm Equipment and Farm Building Construction. Lectures on the cutting, selecting, milling and durability of timbers. One hour attendance. Eight hours laboratory. Three hours credit. Mr. Baer, Mr.————

10. **Forge Work***—Practice in forging, welding, tempering, pipe fitting, babbiting, chipping and repairing of Farm Machinery. Lectures on metallurgy of iron and steel, on wheelwright and shoeing. One hour lecture. Eight hours attendance. Three hours credit. Mr. Sjogren

11. **Advanced Farm Machinery**—Laboratory work in the testing of field machines under various conditions. The testing of grinders, shellers, twine, etc. Prerequisite: Course 1. Six hours laboratory. Two hours credit. First semester. Adjunct Professor Shedd

12. **Advanced Farm Motors**—Complete tests of Farm Motors, both in the field and laboratory. Prerequisite: Course 2, Mechanical Engineering 10, and in connection with Mechanical Engineering 16. Six hours laboratory. Two hours credit. Adjunct Professor Shedd

13. **Perspective Drawing of Landscape***—Being lessons in the use of instruments and perspective drawing. Perspective drawing of buildings and landscapes. Primarily for students in horticulture specializing in landscape architecture. Three hours attendance. One hour credit. First semester, 1912-13, and 1914-15 Professor Chase

18. **Wood Work and Interior Finishing***—Continuation of Course 5 but with hard woods. Prerequisite: Course 5. One hour attendance. Two hours practice. One hour credit. Second semester. Mr. Baer

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*Courses 1, 2, 5, 6, 9, 10, 13, and 18 for undergraduates; courses 3, 4, 7, 8, 11, 12, 14, 15, and 16, for undergraduates and graduates.

## AGROMONY AND FARM MANAGEMENT

Professor Pugsley, (Professor Montogmery,) Adjunct Professor Barker (Soils), Adjunct Professor Hopt (Crops) H. Clyde Filley (Scholar)

Students should have at least one year's work in Botany, Chemistry and Geology. Courses are offered to meet the needs of (1) those students taking general culture courses, or interested in farm operations or the management of land; (2) those fitting themselves to be agricultural teachers or investigators.

Excellent opportunities are offered for graduate students who desire to take up research work. Training in natural and physical sciences is necessary for students taking graduate work. Lines of research work are open to students of this class upon consultation with the head of the department. Graduate courses will also be found under Experimental Agronomy.

FOR UNDERGRADUATES AND GRADUATES

1. **Forage Crops**—Classification, method of improvement of forage crops, their adaptability and distribution, methods of seeding and harvesting, treatment of pastures. Three hours attendance. Six hours preparation. Three hours credit. First semester. Adjunct Professor Hopt

2*a*. **Cereal Crops**—Classification and methods of improvement of cereal crops, their adaptability and distribution, time and methods of seeding, harvesting and cultivating. To be taken in connection with course 2*b*. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Adjunct Professor Hopt

2*b*. **Grading and Judging Grains**—Laboratory practice in describing, scoring, judging and inspecting cereals by outlines and score cards. Methods of breeding to improve these cereals. To be taken in connection with course 2*a*. Four hours laboratory. Two hours preparation. Two hours credit. Second semester. Adjunct Professor Hopt and Assistants

3. **Farm Management**—Dealing with farm problems such as farm location, equipment, labor, marketing, accounting. Should be preceded by courses 1, 2*a*, 7 and 9. Three hours attendance. Six hours preparation. Three hours credit. First semester. Professor Pugsley

4. **Farm Management Seminar**—Prerequisite: course 3. This course deals with problems in farm management and is a continuation of course 3. Special lines of investigation relating to farm management are taken up by the students. Three to fifteen hours meeting, preparation and library. One to five hours credit. Second semester. Professor Pugsley

5 **Advanced Field Crops**—Study of methods of crop treatment, commercial grading of grains and hays—lectures, laboratories and readings. Prerequisite: Courses 1, 2*a*, 2*b*, 7 and 9. Three to fifteen hours work. One to five hours credit. First semester.

Professor Pugsley, Adjunct Professor Hopt

6. **Advanced Field Crops**—5 continued. Second semester.

7. **Soils**—Origin, nature and properties of soils, their relation to plant growth and crop production. Should accompany course 9. First and second semester. Two hours attendance. Four hours preparation. Two hours credit. Adjunct Professor Barker

8. **Soils**—7 continued. Second semester.

9. **Soil Physics**—Physical properties, weight, pore space, specific gravity, soil moisture, soil temperature, effect of various forms of tillage on plant growth. Should accompany course 7. Laboratory, two to eight hours attendance. One to four hours preparation. One to four hours credit. First and second semesters. Adjunct Professor Barker and Assistants

10. **Soil Physics**—9 continued. Mechanical analysis and elementary soil mapping. Second semester.

11. **Soil Management**—Principles governing the management of land, crop system, tillage, rotations, manuring, fertilizing, drainage and aeration. Prerequisite: Courses 1, 2*a*, 7 and 9. Two hours attendance. Four hours preparation. Two hours credit. First semester.
Professor Pugsley, Adjunct Professor Barker

11*a*. **Soil Management Laboratory**—Given in connection with 11. Treating of principles governing the management of land from the practical standpoint. Four hours attendance. Two hours preparation. Two hours credit. First semester. Adjunct Professor Barker

13. **Advanced Soils**—Factors influencing the productive capacity of lands. Lectures, readings, and laboratory. Credit according to work. To be arranged with head of department and assistant. Prerequisite: Courses 1, 2*a*, 7 and 9. First semester. Adjunct Professor Barker

14. **Advanced Soils**—13 continued. Second semester.

15. **Crop Management**—A practical course for the student who expects to operate a farm or manage farms for other people. Dealing with the management of various farm crops. Primarily designed for school of agriculture credit. Two hours attendance. Four hours preparation. Two hours credit. First semester. To be arranged with head of department and assistant. Professor Pugsley, Adjunct Professor Hopt

17. **Farm Documents.**—A course dealing with legal papers with which the farmer should have a working knowledge, such as deeds, mortgages, leases, negotiable instruments, etc. Some time will be devoted to those phases of rural law bearing most directly upon farm management problems. Two hours attendance. Four hours preparation. Two hours credit. First semester. Professor Pugsley

18. **Farm Accounting**—Continuation of 17. A course dealing with the importance of keeping farm accounts, in which a simple and practical

system will be discussed. The subject matter and the arrangement of the farmers library will receive some attention. Two hours attendance. Four hours preparation. Two hours credit. Second semester.

Professor Pugsley

19 **Agronomy**—Given only during summer session. A combined course in field crops and soils, especially prepared for those desiring to teach agriculture in secondary schools. Five lectures. Ten hours laboratory. Three hours credit. Summer session. Professors Barker and Hopt

SCHOOL OF AGRICULTURE COURSES

A. **Crop Management**—History, composition, improvement, production, and disposal of principal cereal and forage crops with special reference to Nebraska conditions. . Three hours attendance. Three hours credit. First semester. Adjunct Professor Hopt

A*a*. **Crop Management Laboratory**—To accompany lectures in A. Two hours laboratory. One hour credit.

B. **Crop Management**—A continued. Second semester.

C. **Crop Laboratory**—Instruction in types, varieties, and quality of cereals, judging by score cards. Identification of grass and legumes and weed seeds. Four hours laboratory. Two hours credit. First semester.

Adjunct Professor Hopt and Assistants

D. **Crop Laboratory**—C continued. Second semester.

E. **Farm Management**—Practical farm problems, such as location, laying out, equipment, system of rotation, and marketing. Two hours attendance. Two hours credit. First semester. Professor Pugsley

F. **Farm Management**—E continued. Farm accounting and legal papers. Second semester.

G. **Soil Tillage and Management**—Order, deposition and natural transportation of soils, physical and chemical constitution of soils and subsoils, size of soil particles in relation to drainage, aeration, water storage and capillarity. Two hours attendance. Two hours credit. First semester.

Adjunct Professor Barker

H. **Soil Tillage and Management**—G continued. Second semester.

I. **Soil Laboratory**—Formation of soil from rock, study of texture and its influence on plant growth. Humus, soil moisture, movement of air, specific gravity and volume weight. Four hours laboratory. Two hours credit. First semester. Adjunct Professor Barker and Assistants

J. **Soil Laboratory**—I continued. Second semester.

## EXPERIMENTAL AGRONOMY

Professor Montgomery (Professor Pugsley), Adjunct Professor Hopt

The courses offered in this department are intended primarily for those desiring to take up advanced work in Agronomy. Extensive lines of inves-

tigation are under way and opportunity is offered to work up some special line. All general courses in Farm Management are prerequisite. Students taking this work are expected to spend the summer season on the experimental farm, for which a moderate compensation is allowed. Only a limited number of students can be accommodated.

1. **Investigation**—Satisfactory work on some special line of investigation with assigned readings. Six to twenty hours laboratory. Thesis required. Two to five hours credit. First semester.

Professor Montgomery

2. **Investigation**—Continuation of 1. Second semester.

3. **Methods of Investigation**—Compilation of experimental data. Correlation tables. Statistical methods. Six to twenty hours laboratory. Two to five hours credit. Professor Montgomery

4. **Methods of Investigation**—Continuation of 3. Second semester.

## ANIMAL HUSBANDRY

Head Professor Smith, Assistant Professor Rail, Instructor Lee, Mr. Gramlich

PRIMARILY FOR UNDERGRADUATES

1. **Breeds of Live Stock**—History of different breeds of live stock. Methods in development of breeds. Characteristics and adaptability of improved breeds. Must be accompanied by course 3. Two hours attendance. Four hours preparation. Two hours credit. First semester.

Assistant Professor Rail

2. **Principles of Animal Breeding**—Theory and practice of animal breeding, variation, correlation, heredity, prepotency and selection. Grading, crossing, line breeding, inbreeding and pedigrees. Two hours attendance. Four hours preparation. Two hours credit. Second semester.

Assistant Professor Rail

3. **Judging Live Stock**—Practice with the score card. Competitive judging of classes by ages of horses, cattle, sheep, and swine. Must be accompanied by course 1. Four hours attendance. Two hours preparation. Two hours credit. Assistant Professor Rail

4. **Judging Live Stock**—Continuation of course 3, which must precede it. Two hours attendance. One hour preparation. One hour credit. Second semester. Assistant Professor Rail

5. **Animal Nutrition**—General composition of animal body. Composition and digestibility of foods. Digestion, absorption, and excretion. Feeding standards. Methods of feeding all classes of farm animals. Influence of food on animal form and on quality of meat and milk. Three hours attendance. Six hours preparation. Three hours credit. Second semester. Head Professor Smith

6. **Animal Nutrition**—5 continued. Advanced course. Review of recent bulletins on feeding. Methods employed in conducting experiments in feeding. Two hours attendance. Four hours preparation. Two hours credit. First semester. Instructor Lee

7. **Judging Live Stock**—Advanced course. Prerequisite: Courses 3 and 4. Two hours attendance. One hour preparation. One hour credit. First semester. Head Professor Smith and Assistant Professor Rail

8. **Judging Live Stock**—Continuation of 7 and must be preceded by it. Two hours attendance. One hour preparation. One hour credit. Second semester. Head Professor Smith and Assistant Professor Rail

9. **Judging Live Stock**—Continuation of 8. Two hours attendance. One hour preparation. One hour credit. First semester. Head Professor Smith and Assistant Professor Rail

10. **Animal Nutrition**—Seminar. Must be preceded by 5 and 6. Two hours attendance. Two hours preparation. One hour credit. Second semester. Head Professor Smith

SCHOOL OF AGRICULTURE COURSES

A. **Breeds and Live Stock Judging**—History and development of horses, breeds of cattle, sheep, and swine. Judging breeds by the score card and by competitive methods. Selecting animals for feeding purposes, judging meat carcasses. Three hours attendance. Three hours credit. First and second semesters. Assistant Professor Rail, Mr. Gramlich

B. **Principles of Breeding**—Elementary study of heredity, variation, and selection; prepotency; effect of pure-bred animals in improving common types. Three hours attendance. Three hours credit. First and second semesters. Assistant Professor Rail

C. **Feeding Live Stock**—Elementary discussion of composition of animal body and of foods. Influence of food on animal form. Economical feeding of farm animals. Five hours attendance. Five hours credit. Second semester. Instructor Lee

D. **Judging Live Stock**—Avdanced course for third year students. Prerequisite: course 8. One hour attendance. One hour credit. First semester. Assistant Professor Rail

E. **Judging Live Stock**—D Continued. Second semester.

## ANIMAL PATHOLOGY

Professor Gain, Assistant Professor Sturdevant

2. **Diseases of Farm Animals**—Causes and prevention of animal diseases. Emergency treatment and minor surgery. Three hours attendance. Six hours preparation. Three hours credit. Second semester. Associate Professor Gain

SCHOOL OF AGRICULTURE COURSES

A. **Anatomy and Physiology**—Study of skeletons of horse and cow. Anatomy of digestive system and physiology of digestion. Circulatory system and study of blood. Three hours attendance. Three hours credit. First semester. Assistant Professor Sturdevant

B. **Anatomy and Physiology**—Respiration. The nervous system. The senses. The foot. Generation and development. Three hours attendance. Three hours credit. Second semester. Assistant Professor Sturdevant

C. **Diseases of Farm Animals**—Hereditary diseases. Diseases of respiratory system. Prevention of digestive diseases. Minor emergency surgery. Prerequisite: Anatomy and Physiology A and B. Three hours attendance. Three hours credit. First semester. Professor Gain

D. **Diseases of Farm Animals**—Contagious diseases. Hygiene and Farm Sanitation. Three hours attendance. Three hours credit. Second semester. Professor Gain

E. **Elements of Physiology**—Bones of skeleton. Digestion. The circulatory system. Respiration. The senses. Drugs and stimulants. Two hours attendance. Two hours credit. First semester.
Assistant Professor Sturdevant

F. **Hygiene and Sanitation**—Personal hygiene. Domestic hygiene. Ventilation and water supply. Public hygiene. Two hours attendance. Two hours credit. Second semester. Assistant Professor Sturdevant
(Offered in the course for women in the School of Agriculture.)

## DAIRY HUSBANDRY

Head Professor Haecker, Adjunct Professor French

2. **General Survey of Home Dairying**—Composition of milk and dairy products. Production, handling, testing, and uses of milk. The creaming of milk by centrifugal separators. Ripening, testing, and churning of cream. Making, scoring, and marketing butter; cheese making. Dairy stock breeding, feeding and judging. Two hours attendance. Six hours laboratory. Four hours credit. Second semester.
Head Professor Haecker, Adjunct Professor French

3. **Dairy Stock Judging**—A special course in dairy stock judging. Work given with the four dairy breeds—Ayrshires, Guernseys, Holsteins, and Jerseys. Two hours attendance. One hour preparation. One hour credit. First semester. Head Professor Haecker

4. **Economic Dairying**—Advanced study in dairy husbandry, taking up the scoring of dairies by the score card system and the management of the market dairy. Prerequisite: Course 2. Text-book, with readings in station bulletins and publications. Two hours attendance. Two hours credit. Second semester. Adjunct Professor French

6. **Dairy Husbandry**—Prerequisite: Courses 2 and 4. Advanced studies in experiment station findings. A reading course with one lecture a week. Eight hours preparation. Three hours credit. Second semester.

Head Professor Haecker

8. **Dairy Stock Judging**—A continuation of course 3. One hour preparation. One hour credit. Second semester.

Adjunct Professor French

SCHOOL OF AGRICULTURE COURSES

A. **General Study of Home Dairying**—Secretion, composition and production of milk. Practice with the various centrifugal hand-separators. Butter making, milk and cream testing. Two hours attendance. Four hours laboratory. Two hours credit. First term.

Head Professor Heacker, Adjunct Professor French

B. **General Study of Home Dairying**—A continued. Practice with the lactometer. Cheese making. Care and judging of dairy stock. Milk and its products. Two hours attendance. Four hours laboratory. Two hours credit. Second term.

Head Professor Haecker, Adjunct Professor French

## ENTOMOLOGY

Head Professor Bruner, Assistant Professor Swenk, Mr. Dawson

Courses 1 and 2 are open to all students, and they, or their equivalent, must precede all other courses in Entomology except 3, 4*a*, 9 and 10. Courses 3 and 4, or 4*a*, must precede courses 7 and 8.

GRADUATE WORK

A candidate for the degree of Master of Arts in Entomology must have had Zoology 1 and 2, or their equivalents, in addition to Entomology 1 and 2. He should be able to read Latin and either French or German, or both.

The department has in Experiment Station Hall a laboratory fully equipped for the use of students engaged in research work along systematic lines, and also a modern insectary well provided with apparatus useful in facilitating research in Economic Entomology for those investigating the life-histories of insects. A collection of insects numbering approximately 135,000 pinned specimens is well housed in special cabinets and Schmitt boxes and is available for study by advanced students; it is particularly rich in Hymenoptera, Diptera and Orthoptera and contains many specimens of these orders named by specialists, including a considerable number of their types. While the greater portion of the collection is representative of our state and national fauna, it is also exceedingly rich in exotic material from Argentina, Costa Rica and Mexico. The library contains practically complete files of all American and the principal foreign entomological

periodicals as well as most of the special monographs in the various orders, and is readily accessible to advanced students, while the excellent economic libraries of the State Entomologist and Nebraska Experiment Station are close at hand and available for referncee. The results of studies carried on in the department are issued consecutively in a numbered series.

MASTER OF ARTS

As his major for the degree of Master of Arts the student may choose either courses 15 and 16 or 17 and 18. He may elect his first and second minors from the other courses offered as graduate studies in this department or from the courses offered as graduate studies in the Department of Zoology.

The graduate work of this department is of so technical a nature, being chiefly designed to prepare students as government, state or experiment station investigators in Entomology, or as museum scientists, that each student should consult with the head of the department before registering.

PRIMARILY FOR UNDERGRADUATES

1. **General Entomology**—A general survey of the class Insecta, with introductory lectures on arthropod structure, physiology, transformations, distribution and behavior, followed by a consideration of the characteristics of the orders, suborders and principal families of insects, and the life-histories and habits of typical species. Laboratory dissections of typical forms of the various orders, correlated with the lectures. Three hours attendance. Six hours laboratory and preparation. Three hours credit. First semester. Head Professor Bruner, Mr Dawson

2. **General Entomology**—1 continued. In addition, general work in the collection and classification of insects, and the study of microscopical forms. Three hours attendance. Six hours laboratory and preparation. Three hours credit. Second semester.

3. **Economic Entomology**—An introduction to the practical phases of entomology, presenting the broad principles of insect damage and control. Types of insect injury; beneficial insects; parasitism; gall formation; fungous and bacterial diseases of insects; climatic influence on insect control; cultural preventives and artificial remedies in fighting insect pests. Assigned readings and laboratory work in rearing insects and following out life-histories in the insectary, designed principally to give the student a general view of insect metamorphosis and of insectary methods and the use of apparatus. Two hours attendance. Four hours laboratory and preparation. Two hours credit. First semester.

Head Professor Burner, Assistant Professor Swenk

4. **Economic Entomology**—3 continued. Detailed studies of our most conspicuous insect pests concerning their life-histories and habits, and pre-

ventives and remedies for them, and in the spring observations of their work in the field. One hour attendance. Five hours laboratory, preparation and field work. Two hours credit. Second semester.

4*a*. **Economic Entomology**—A combination of courses 3 and 4, especially for second year students in the Agricultural Group. Three hours attendance. Nine hours laboratory, preparation and field work. Four hours credit. Second semester.

Head Professor Bruner, Assistant Professor Swenk

FOR GRADUATES AND UNDERGRADUATES

5. **Systematic Entomology**—A study of the principles and machinery of classification as applied to insects. Taxonomic groups; evaluation of characters; evolution of organs; dimorphism; nomenclature codes; synonymy; types; methods of description; construction of tables; use of reference books; faunal areas; ecological methods. Laboratory work with various insect groups designed to give a conception of the varying value of classificatory characters. Two hours attendance. Seven or more hours laboratory. Three or more hours credit. First semester.

Assistant Professor Swenk

6. **Systematic Entomology**—5 continued. In addition, a detailed study of entomological technique involving the methods of collecting, preparing and preserving entomological specimens for the cabinet and museum; entomotaxy; use of entomological apparatus; entomography; entomological literature and methods of publication; bibliography, index and catalog compilation. Two hours attendance. Seven or more hours laboratory and field work. Three or more hours credit. Second semester.

7. **Advanced Economic Entomology**—A review of the groups of insects injurious to any host plant or group of plants, including the insect enemies of corn, the small grains, alfalfa and clover, grasses, potato, sugar beet, garden vegetables, apples, stone fruits, grape and bush fruits. Assigned and original laboratory work in life-histories and actual field work in investigating insect pests. Two hours attendance. Ten or more hours labortory. Four or more hours credit. First semester.

Head Professor Bruner, Assistant Professor Swenk

8. **Advanced Economic Entomology**—7 continued. In addition, a consideration of the principal insect enemies of domestic animals and stored vegetable and animal products, the preparation and use of insecticides and methods of spraying and fumigation; nursery inspection; determination of injurious scale insects; entomological office methods; insect photography. Two hours attendance. Ten or more hours laboratory. Four or more hours credit. Second semester.

9. **Apiculture**—A general survey of the subject, including a discussion of the structure, life-history, varieties and communal life of the honey bee; methods of handling bees, formation of colonies, enlarging brood nests, controlling the colony growth, rearing of queens, honey and wax production, honey-producing plants, apiary paraphernalia and the symptoms, etiology and control of bee diseases and other enemies of bees. One hour attendance. Two hours laboratory and reading. One hour credit. First semester. Head Professor Bruner

10. **Domestic Entomology**—A series of lectures on insects affecting the household, with suggestions for their control. House ants, cockroaches, termites, silver fish, clothes moths, carpet beetles, skippers, flour beetles and meal worms, lice, fleas, house flies, mosquitoes, etc. One hour attendance. Two hours laboratory and reading. One hour credit. Second semester. Assistant Professor Swenk

11. **Forest Entomology**—Lectures and laboratory studies of the insects of the forest. Two hours attendance. Four hours laboratory. Two hours credit. First and second semesters. Head Professor Bruner

12. **History of Economic Entomology**—An outline of the history of entomology, particularly the development of economic entomology from the earliest efforts down to the work of Riley and the advent of the new school of entomologists. One hour attendance. Two or five hours assigned readings. One or two hours credit. Second semester.
Assistant Professor Swenk

13. **Medical Entomology**—A study of insects in their relation to the transmission of certain human diseases and of their capacity as human parasites. One hour attendance. Two or more hours laboratory. One or more hours credit. First semester. Head Professor Bruner

14. **Seminary**—The seminary work of the department is carried on by the Nebraska Entomological Society, an association of students specializing in entomology and taking advanced or graduate courses, meeting one evening each week for the presentation of papers and the discussion of current progress in entomological science. Time spent in the preparation of papers and attending meeting may be applied as laboratory work.

PRIMARILY FOR GRADUATES

These courses may be registered for repeatedly until the completion of the problem.

15. **Research in Systematic Entomology**—Independent studies under the advice of the head of the department leading to the monographing of some genus, subfamily or family of insects or the detailed study of the insect fauna of Nebraska in one of the larger groups. First semester.
Head Professor Bruner

16. **Research in Systematic Entomology**—15 continued. Second semester.

17. **Research in Economic Entomology**—Individual investigation of some special problem in economic entomology, usually the monographing of a series or group or species of economic importance. First semester.

Head Professor Bruner

18. **Research in Economic Entomology**—17 continued. Second semester.

SCHOOL OF AGRICULTURE COURSES

A. **Agricultural Entomology**—Insects in their relation to Agriculture For men. Two hours lecture. First semester.

Assistant Professor Swenk

B. **Agricultural Entomology**—Course A continued, taking up the principal insect pests of our crops. Second semester.

C. **Home Economics Entomology**—Insects in their relation to the household. For women. Two hours lecture. First semester.

Assistant Professor Swenk

D. **Home Economics Entomology**—Course C continued. Second semester.

E. **Farm Entomology**—An abridgement of courses A and B for students in the winter course. Sixteen lectures. Assistant Professor Swenk

## FORESTRY

Adjunct Professor Sponsler in charge of the department, Mr. Duppert.

Course 1 is open to all students. Before electing other courses students should confer with the head of the department. Courses 7, 8, 11, 12, 15, 16 may be taken by students in other departments; in addition to these courses 23, 24, 25, 26 may be taken as minors by graduates who are candidates for advanced degrees in other departments. Advanced students desiring to elect Silvicultural Problems (Forestry 23 and 24), or Wood Structure Problems (Forestry 25, 26), or to pursue investigations along other forestry lines, may arrange the number of credit hours by consulting with the head of the department; no more than four credit hours will be allowed for this work in any one subject in one semester.

Course 17a is given by Mr. F. B. Moody, Assistant State Forester of Wisconsin, Courses 12*a* and 12*b* are given by Mr. William H. Mast, of the Forest Service, U. S. Department of Agriculture. Through the courtesy of the United States Forest Service, the University is able to announce several special lectures on various forestry problems. Special work is given in emergency surgery and in camp equipment, packing horses, etc A special course is given in rhetoric which is designed to give the forestry student preparation for the writing of scientific articles on forestry.

This course is given in the Rhetoric Department, but both departments emphasize the proper use of text-book and lecture references, gathering of material, analysis, outlines, and structure. The articles are corrected for English in the Rhetoric Department and for scientific accuracy in the Forestry Department.

A degree of Master of Forestry is given upon satisfactory completion of the courses scheduled for the fifth year. This presupposes a major in Forestry and a minor in Botany. If a minor in Entomology, in Engineering or in other departments is desired, the student should confer with the heads of both departments. In addition, one year's practical field experience in forestry will be required before granting the Master's degree. This may be accomplished by vacation work or by a year's continuous work. Such experience is essential to proper training of the student and should be as diversified as possible.

1. **General Forestry**—Importance of forests and forestry in the life of the nation; relation of forestry to agriculture and to other industries; uses of wood. Two hours attendance. Four hours preparation. Two hours credit. First semester. Adjunct Professor Sponsler, Mr. ————

2. **General Forestry**—1 continued. Second semester.

7. **Forest Utilization**—Uses of timber; methods of logging and milling; cost of lumbering in various forest regions; seasoning, grading, markets, final product; secondary forest products; minor forest products. Two hours attendance. Four hours preparation. Two hours credit. First semester. Adjunct Professor Sponsler, Mr. ————

8. **Forest Utilization**—7 continued. Second semester.

11. **Silviculture**—Objects of silviculture; forest soils and their relation to tree growth; forest influences on soil, climate, and stream flow; forest types; pure and mixed forests. Three hours attendance. Five hours laboratory. One hour library work. Three hours credit. First semester. Adjunct Professor Sponsler, Mr. ————

12. **Silviculture**—11 continued. Methods of reproducing forests; forest nurseries, planting, thinning, harvesting; forest injuries and methods of prevention. Includes 12*a* and 12*b*. Three hours attendance. Five hours laboratory and field work. One hour library work. Three hours credit. Second semester. Adjunct Professor Sponsler, Mr. ————

12*a*. **National Forest Planting**—Methods of seed collecting, seed storing, nursery practice, and field planting. Six to eight lectures. Second semester. Mr. Mast

12*b*. **Commercial Nursery Practice**—Methods employed in various parts of the United States and relation to private planting. Six to eight lectures. Second semester. Mr. Mast

15. **Forest Mensuration**—Forest surveys and mapping. Methods of determining volume, age and increment of single trees and of stands. Three hours attendance. Five hours laboratory and field work. One hour library work. Three hours credit. First semester.

Adjunct Professor Sponsler

16. **Forest Mensuration**—15 continued. Second semester.

Adjunct Professor Sponsler

17. **Forest Policy**—Forestry methods in foreign countries and in the United States. State and national activity as to public and private holdings; taxation, benefits, fire laws, working forces, achievements. Includes 17*a*. Two hours attendance. Four hours preparation. Two hours credit. First semester. Adjunct Professor Sponsler

17*a*. **State Forestry**—Special state problems; management of state reserves; marking timber, trespass, timber sales. Ten to fifteen lectures. Second semester. Mr. Moody

19. **Forest Management and Valuation**—Preparation of working plans for private, state and national holdings; valuation of forest soils and forest growth; administration, regulation of forests, and forest finance. Three hours attendance. Six hours preparation. Three hours credit. First semester. Adjunct Professor Sponsler, Mr. ————

20. **Forest Management and Valuation**—19 continued. Second semester.

21. **Thesis**—Subject for thesis is to be selected upon recommendation of the head of the department. Consultation hours to be arranged. Six hours preparation. Two hours credit. First semester.

Adjunct Professor Sponsler, Mr.————

22. **Thesis**—21 continued. Second semester.

23. **Forestry Problems**—A definite problem will be assigned to each student. A written report is required upon completion of the work. Consultation hours to be arranged. Six to twelve hours laboratory. Two to four hours credit. First semester.

Adjunct Professor Sponsler, Mr. ————

24. **Forestry Problems**—23 continued. Second semester.

29. **Seminar**—Special phases of forestry with detailed reports by students. Current literature in forestry, forest botany, lumbering. Two hours attendance. Two hours library work. No credit. First semester.

Adjunct Professor Sponsler, Mr. ————

30. **Seminar**—29 continued. Second semester.

Botany 35. **Dendrology**—Brief review of the morphology and physiology of the tree. Forest regions, forest types, and forest trees of North America. Distribution. Economic importance. Detail study of den-

drological and silvical characteristics of about one hundred important forest trees. Two hours attendance. Four hours laboratory and field work. Two hours credit. First semester. Adjunct Professor Sponsler

Botany 36. **Dendrology**—35 continued. Three hours attendance. Six hours laboratory and field work. Three hours credit. Second semester.

Botany 37. **The Study of Woods**—A study of the structure of the important woods leading to their identification and to the relation of structure to strength, weight, shrinkage, and other physical properties. Primarily for foresters. Engineers may elect this course for two hours credit after consultation with the instructor. Two hours attendance. Six hours laboratory. One hour reading. Three hours credit. First semester.

Adjunct Professor Sponsler

Civil Engineering 30. **Forest Survey**—Designed for students of forestry. Prerequisite: Civil Eng. 5, 5*a*. Field and map work. Three hours credit. Second semester. Professor Bridgman

Applied Mechanics 20. **Timber Physics**—Physical properties of timber. Primarily for forestry students. Prerequisite: Study of Woods (Botany 37). One hour attendance. Six hours laboratory. Three hours credit. Second semester. Professor Chatburn

Zoology 14. **Forest Zoology**—Life history and habits of animals, exclusive of insects, which affect the forest. Methods of control. Prerequisite: Zoology 1. Two hours attendance. Four hours laboratory and field work. Two hours credit. Professor Wolcott

Botany 25. **Forest Mycology**—Detailed study of the fungi which attack forest trees. Two hours attendance. Six hours laboratory and field work. Two hours credit. First semester. Assistant Professor Pool

Entomology 11. **Forest Entomology**—Insects of the forest. This course is intended for forestry students. Two hours lectures. Four hours laboratory. Second semester. Professor Bruner

American History 10. **Public Lands**—Disposal and settlement of public lands. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Associate Professor Persinger

SCHOOL OF AGRICULTURE COURSES

A. **Farm Forestry**—Relation of forest to agriculture. Wind-breaks, shelter-belts, and forest plantations. Methods of propagation, planting, and protection. Two hours attendance. Four hours library and field work. Two hours credit. Second semester.

Adjunct Professor Sponsler, Mr.————

B. **Farm Forestry**—An adaptation of course A for students in the short course of the School of Agriculture. Sixteen lectures.

Adjunct Professor Sponsler, Mr.————

## GEOGRAPHY AND ECONOMIC GEOLOGY

Professor Condra, Associate Professor Loveland, Assistant Professor Bengtson

The agricultural subjects of this department are: Courses 1, 2, 4, 5, and 28. Course 1 considers the origin and description of land forms. Number 2 treats the structure, climate, topography, resources and industrial development of North America. It emphasizes the control of the various soil regions. Number 4, the geography and meteorology of the atmosphere, is especially designed to meet the need of agricultural students. Industrial Geography, Course 5, is planned for students who wish a detailed description of certain agricultural resources and industries. Course 28 gives only those geological facts which are of importance to students of this college.

1. **Physical Geography of the Land**—A practical course consisting of illustrated lectures, laboratory exercises and readings. Lecture topics: structure and relief features; maps and globes; origin of plains, plateaus and folds; wind erosion: dust and dunesand; sandhills and deserts; ground water; land slides, talus cones and slopes; rivers and the factors which influence them; development and classification of valleys; origin and classification of land forms produced by river erosion of plains, plateaus and folds; deltas, flood plains, fans and terraces; work of snow and ice; moraines, drumlins and till plains; topographic effects of earthquakes and volcanoes; lava plateaus. The course considers physiographic processes and their resulting land forms together with some of the influences which these bear to life and industry. The laboratory subjects are: minerals and rocks; wet laboratory experiments; maps, folio, atlas, and model interpretations and studies. Two hours attendance. Four hours laboratory and preparation. Two hours credit. First semester.

Professor Condra, Assistant Professor Bengtson

2. **North America**—The leading geographic conditions such as structure, topography, harbors and coast line, climate, and the natural resources are treated with considerable detail in their relation to the industrial, political, and social development of the topographic regions and countries. Most time is given to United States and Mexico. Considerable attention is given to the geography of Nebraska and to the physiographic development of the natural gateways or routes which lead into and across the continent. Lectures fully illustrated. Laboratory studies based on topographic and physical maps, climatic charts, atlases, and models. Attendance two hours. Laboratory, library and preparation four hours. Two hours credit. Second semester

Professor Condra, Assistant Professor Bengtson

4. **The Atmosphere**—A study of meteorology and geography of the atmosphere designed to meet the practical needs of students. Some of the topics considered are: The physical and chemical nature of the atmosphere; distribution of heat and atmospheric pressure; wind systems; humidity and rainfall; storms; hot winds; changes and fluctuations of climate; climatology in its relation to deserts, prairie land, forests, agriculture, and distribution of people. Students are taught the construction of weather maps and climatic charts; forecasting; and the use and care of meteorological instruments. Experiments of various kinds are performed in the wet laboratory. Two hours attendance. Four hours laboratory and preparation. Two hours credit. Second semester.

Associate Professor Loveland

5. **Industrial Geography**—This course gives a review of the natural resources and their conservation, and a specific study of mineral fuels, iron and steel, water power, cotton, rice, the sugars, coffee and tea, wheat, corn. The instruction is made concrete by the use of well selected sets of lantern slides which show the leading processes and commercial movements of each industry. Commercial raw materials are shown by museum specimens and excursions are made to local industries. Two hours attendance. Four hours museum, library and preparation. Two hours credit. First semester. Professor Condra, Assistant Professor Bengtson

21. **Field Geology**—This course consists of excursions to quarries, gravel pits, sand dredges and outcropping formations along Salt Creek, Blue River and the Platte. It teaches methods of doing field work and how to use the aneroid barometer, level, transit, plane table, camera and drawing materials as employed on geological and soil surveys. Mapping and descriptions. Collateral readings. One or two hours credit. First and second semesters. Assistant Professor Bengtson

22. **Field Geology**—21 continued. First and second semesters.

Professor Condra

28. **Agricultural Geology**—Leading geologic structures; soil forming, road and cement-making minerals and rocks; rock weathering; land erosion; ground water; rural water supplies; evolution of farm animals as shown by museum fossils; structure and soil regions of Nebraska; the agricultural importance of the "Red Bed," "Pierre, Bad Land, Loup Fork, glacial, loess, alluvial and dunesand formations." Two hours attendance. Four hours laboratory, field and preparation. Two hours credit. Second semester. Professor Condra, Assistant Professor Bengtson

## HORTICULTURE

Professor Emerson, Adjunct Professor Westgate, and Adjunct Professor Howard

### GENERAL INFORMATION

The laboratories in Horticultural Hall are provided with charts, models, and specimens illustrating various phases of horticulture. They accomodate thirty students at a time. Greenhouse room is available for the plants used in experimental work. A small nursery in the horticultural grounds furnishes much of the material used in the laboratory and at the same time illustrates practical methods of propagating various plants. The orchards, vineyards and small fruit gardens of the Experiment Station afford practice work in pruning and training fruits and present the opportunity for comparison of various cultural methods. The farm campus and newly established arboretum furnish very good material for the study of landscape gardening. A limited number of advanced students who desire to fit themselves as teachers or investigators will be employed at a moderate compensation to assist in the laboratory of the School of Agriculture during the winter or to help in the experimental work of the Experiment Station during the summer. The investigations now being conducted by the department on the subject of heredity afford especially favorable opportunities to graduate students.

Botany 1 and 2 should precede all college courses in horticulture and must precede courses 7 and 8. All college courses are open to women as well as to men, but course 6 is especially recommended to women. Courses 5, 9 and 10 are open only to students specializing in horticulture. Students taking course 9 or 10 will ordinarily find it necessary to be at the Experiment Station during the summer.

### PRIMARILY FOR UNDERGRADUATES

**1. Plant Propagation**—The multiplication of plants by means of seeds, bulbs, tubers, layers, cuttings, grafts, etc. Growing, packing, storing, and shipping nursery stock. Two hours attendance. Three hours laboratory. Two hours library. Two hours preparation. Three hours credit. First semester. Adjunct Professor Westgate

**2. Orcharding**—A detailed consideration of orchard management. The tree fruits grown in Nebraska are studied according to the following scheme: Selection of varieties, choice of site, preparation of the land, planting, cultivation, covercrops, fertilizers, wind-breaks, pruning, spraying, protection from frost, harvesting, packing, storing, marketing; renovating old orchards. Three hours attendance. Two hours laboratory. Two hours library. Two hours preparation. Three hours credit. Second semester. Adjunct Professor Howard

3. **Apple Judging**—A study of fall and winter varieties of apples adapted to Nebraska. Practice in judging with and without score cards, identifying and describing varieties, preparing exhibits, packing and storing, etc. One hour attendance. Four hours laboratory. One hour library. Two hours credit. First semester. Adjunct Professor Howard

4. **Fruit and Vegetable Gardening**—Small fruits adapted to Nebraska are considered according to the scheme outlined for tree fruits in course 2. A part of the time will be devoted to a consideration of the more important garden vegetables. Three hours attendance. Two hours laboratory. Two hours library. Two hours preparation. Three hours credit. Second semester. Adjunct Professor Howard

5. **Floriculture**—The production of flowers both indoors and outdoors for home use and for market. Particular attention will be given to the construction and management of greenhouses. Two hours attendance. Four hours laboratory. Two hours library. One hour preparation. Three hours credit. First semester. Adjunct Professor Westgate

6. **Ornamental Gardening**—A consideration of the principles of landscape gardening with practice in landscape designing. A study of ornamental trees, shrubs and other plants adapted to planting in Nebraska: their classification, culture, and decorative value. Two hours attendance. Two or four hours laboratory. One hour or two hours library. One hour preparation. Two or three hours credit. Second semester. Adjunct Professor Westgate

FOR UNDERGRADUATES OR GRADUATES

7. **Principles of Plant Breeding**—An elementary study of the principles underlying plant improvement, including simple discussions of the following: How plant characters arise and disappear, sports or mutations, bud variation. How characters are inherited, alternate versus blended inheritance. Mendelian and non-Mendelian inheritance. Appearance and inheritance of latent characters. Reversion. Correlation of characters in inheritance. Degree of development of characters. or fluctuation due to environment. Adaptation. Statistical study of fluctuations. Inheritance of fluctuations. Effect of selection in modifying the type of self- and open-pollinated plants. Pure lines. Mass selection versus isolation of biotypes. Pedigree breeding. Hybridization as a means of combining desirable parent characters. Inbreeding. Students will study and classify variations in wild and cultivated plants, prepare a herbarium of variations, practice hybridizing plants, and study hybrid material in the greenhouse and laboratory. Two hours attendance. Two hours laboratory. One hour library. One hour preparation. Two hours credit. First semester. Professor Emerson

8. **Genetics**—Current theories of variation and heredity; their bearing upon plant breeding. A critical study of the published results of recent investigations. Assigned readings and consultation. Six or nine hours library. Two or three hours credit. Second semester.

Professor Emerson

9. **Horticultural Problems**—The study of assigned problems in plant breeding or in the production of horticultural crops. In the main only problems closely related to the investigations being conducted in the Experiment Station will be assigned. Laboratory or field work with assigned readings, consultation, and the preparation of a satisfactory thesis. Five to twelve hours laboratory. One to three hours library. Two to five hours credit. First and second semesters.

Professor Emerson

10. **Horticultural Problems**—Continuation of 1. First and second semesters.

12. **Landscape Design**—Lectures on special landscape gardening problems. Advanced work in designing home grounds, parks, etc. Detailed studies of plants and plantings, including excursions to places of special interest. One hour lecture. Three to four hours library. Five to ten hours laboratory. Three to five hours credit. Second semester.

Adjunct Professor Westgate

SCHOOL OF AGRICULTURE COURSES

Courses A and B are for first-year men, courses C and D for second-year women, courses E and F for regular fourth-year men and irregular third-year men.

A. **Orcharding**—The management of both home and commercial orchards, including the propagation, culture, harvesting, storing, and marketing of such tree fruits as apple, pear, cherry, plum, and peach. Three hours attendance. Two hours laboratory. First semester.

Adjunct Professor Westgate

B. **Small Fruits**—A study of such fruits as the strawberry, blackberry, raspberry, gooseberry, currant, and grape. Each fruit is studied with reference to soil, cultivation, propagation, pruning, varieties, harvesting, marketing, etc. Two hours attendance. Two hours laboratory. Second semester. Adjunct Professor Westgate

C. **Home Horticulture**—The home orchard and garden. The principles of ornamental gardening as applied to the home. Two hours attendance. Two hours laboratory. First semester.

Adjunct Professor Westgate

D. **Home Horticulture**—Continuation of C. Second semester.

E. **Ornamental Gardening**—The general principles of ornamental gardening; methods and plans for ornamenting the farm home, city lot, etc. Two hours attendance. Two hours laboratory. First semester.

Adjunct Professor Westgate

F. **Vegetable Gardening**—General cultural requirements of our common vegetable crops. Two hours attendance. Two hours laboratory. Second semester. Adjunct Professor Westgate

## HOME ECONOMICS

Professor Bouton, Associate Professor Folger, Miss Davis, Miss Harper, Miss Nesbitt, Miss Hedges

### GENERAL INFORMATION

The purpose of the department of Home Economics is to give instruction in branches which have to do with the welfare of the home. Training is provided in domestic science and art, and in household administration. Under these general divisions are studied: food, textiles and clothing; the house, its furnishing and the management of the work done therein. All these branches are considered in their relation to the family and the individual, with special emphasis on those phases which have to do with the health and comfort of the individual. Special attention is given to artistic, economic and sociological questions which form a legitimate part of the work.

Instruction is given by the lecture laboratory method.

For a major in Home Economics in the Teachers College the following courses are required: 1, 2, 3, 4, 5, 6, 9, 10, 13 and 14; for a minor, courses 1, 2, 3, 4, 5 and 6. The use of these courses as a major is conditional on the completion of Chemistry 1, 2, 3 and 14.

### THE UNIVERSITY TEACHERS' CERTIFICATE IN HOME ECONOMCIS

See statement under "Requirements for Graduation," page 15.

### PRIMARILY FOR UNDERGRADUATES

1. **Sewing and Design**—Fundamental principles of hand and machine sewing applied to making of household articles, undergarments and shirt waist suit. Repairing, by patching and darning. Textiles, their manufacture, quality and value. Principles of design applied to Household Art. Two hours attendance. Four hours laboratory. Three hours outside preparation. Three hours credit. First semester.

Miss Davis and Assistant

2. **Sewing and Design**—1 continued. Second semester.

3. **Foods: Selection and Preparation**—Composition and function of typical foods; fundamental principles and processes of cooking and their application in the preparation of individual dishes; nutritive and money

values. Should be preceded by Chemistry 1 and 2. Three hours attendance. Six hours laboratory. Three hours credit. First semester.
Associate Professor Folger, Miss Nesbitt

4. **Foods: Selection and Preparation**—3 continued. Second semester.

11. **General Cookery**—For juniors and seniors who desire some work in cookery, but have not the time for Courses 3, 4, 5 and 6. General principles and methods of cooking; lessons in serving. Two hours attendance. Four hours laboratory. Two hours credit. First semester.
Associate Professor Folger, Miss Harper

12. **General Cookery**—11 continued. Second semester

15. **Elementary Cookery**—For students who have no preparation in chemistry. One hour attendance. Three hours laboratory. One hour credit. First semester. Associate Professor Folger, Miss Nesbitt

16. **Elementary Cookery**—15 continued. Second semester.

FOR UNDERGRADUATES AND GRADUATES

5. **Advanced Cookery**—Application of scientific principles to more elaborate dishes and to menus. Preservation of foods; serving of meals. Two hours attendance. Six hours laboratory. Two hours credit. First semester. Associate Professor Folger, Miss Nesbitt

6. **Advanced Cookery**—5 continued. Second semester.

5*a*. **Dietetics**—To be taken with course 5. Consideration of problems of digestion and metabolism. Study of dietaries of given cost and their adaptation to varying conditions of health, age, environment, etc. Diet of children; family dietaries; diet of invalids. One hour attendance with assigned readings. One hour credit. First semester. Associate Professor Folger

6*a*. **Dietetics**—5*a* continued. Institutional and special dietaries. Second semester.

7. **Industrial Art**—Crinoline modelling and advanced work in drafting, cutting, fitting and finishing gowns. Millinery, construction of frames, covering and trimming. Embroidery, the principal stitches used in decorative art and their application. Textiles, microscopical and chemical tests. Design, color work. Miss Davis

8. **Industrial Art**—7 continued. Second semester.

9. **Household Administration**—House plans and furnishings; ventilation, heating, lighting, water supply, disposal of waste; management of household affairs, division of income, domestic service, and home nursing; house practice, including all processes of practical housekeeping. Two hours attendance. Two hours laboratory. Two or five hours outside preparation. Two or three hours credit. First semester. Professor Bouton

10. **Household Administration**—9 continued. Second semester.

13. **Teachers' Course**—Required of candidates for the University Teach-

ers' Certificate in Home Economics. Lectures with practice work in Teaching. Two hours attendance. Four hours outside preparation, including practice teaching. Two hours credit. First semester.

Associate Professor Folger

14. **Teachers' Course**—13 continued. Second semester.

17. **Wood Work and Interior Finish**—(See Agricultural Engineering 5.)

18. **Wood Work and Interior Finish**—17 continued. Second semester.

SCHOOL OF AGRICULTURE COURSES

A. **Sewing and Design**—Hand and machine sewing, making of garments, study of form and color as applied in house furnishing; practice in house work. Three hours attendance. Six hours laboratory. Three hours credit. First semester. Professor Bouton, Miss Hedges

B. **Sewing and Design, House Practice**—A continued. Second semester.

C. **Elementary Cookery**—Composition and preparation of food with a study of its relation to healthful living; house practice. Three hours attendance. Six hours laboratory. Three hours credit. First semester.

Miss Harper and Assistant

D. **Elementary Cookery, House Practice**—C continued. Second semester.

E. **Advanced Cookery**—Preparation and serving of meals; food for the sick; house practice. Three hours attendance. Six hours laboratory. Three hours credit. First semester. Miss Harper and Assistant

F. **Advanced Sewing**—Drafting, cutting and making of garments, including shirt waist suit; application of design in stenciling; house practice continued. Three hours attendance. Six hours laboratory. Three hours credit. Second semester. Miss Denny and Assistant

G. **Household Management**—House planning and furnishing; home sanitation; domestic service and finance. One hour attendance. Three hours laboratory. Two hours outside preparation. Two hours credit. First semester. Professor Bouton and Assistant

H. **Dressmaking**—The designing and making of dresses. One hour attendance. Two hours outside preparation. Two hours laboratory. Two hours credit. Second semester. Miss Denny

## MILITARY SCIENCE AND TACTICS

[See College of Arts and Sciences]

## PHYSICAL EDUCATION

[See College of Arts and Sciences]

# The Agricultural Experiment Station for Nebraska

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## GOVERNING BOARD OF THE EXPERIMENT STATION

(The University Board of Regents)

### Officers

HON. CHARLES SUMNER ALLEN, President ..... Lincoln
HON. WILLIAM GUNN WHITMORE ..... Valley
HON. VICTOR GERALD LYFORD ..... Falls City
HON. CHARLES BARNEY ANDERSON ..... Crete
HON. GEORGE COUPLAND ..... Elgin
HON. FRANK LOUIS HALLER ..... Omaha

## OFFICERS OF THE EXPERIMENT STATION

EDGAR ALBERT BURNETT, B. Sc., Director.
JAMES STUART DALES, M. Ph., Financial Secretary.*
WILLIAM WARNER MARSHALL, Executive Clerk.

## THE WORKING STAFF

EDWIN MEAD WILCOX, Ph. D., Agricultural Botany.
FREDERICK JAMES ALWAY, Ph. D., Agricultural Chemistry.
LEON WILSON CHASE, B. Sc. in M. E., Agricultural Engineering.
CHARLES W. PUGSLEY, B.Sc., Agronomy and Farm Management (Soils)
HOWARD REMUS SMITH, B. Sc., Animal Husbandry.
JAMES HARRISON GAIN, M. D. C., Animal Pathology.
†ARCHIBALD LOUIS HAECKER, B. Sc. A., Dairy Husbandry.
LAWRENCE BRUNER, B. Sc., Entomology.
EDWARD GERRARD MONTGOMERY, A.M., Experimental Agronomy.
‡FRANK J. PHILLIPS, A. B., B. Sc., M. S. F., Forestry.
OLENUS LEE SPONSLER, A. B., Adjunct Professor in Botany and Forestry and Acting Head of the Department of Forestry.
ERWIN HINCKLEY BARBOUR, Ph. D., Geology.
GEORGE RICHARD CHATBURN, A. M., Highway Engineering.
ROLLINS ADAMS EMERSON, B. Sc., Horticulture.
OSCAR VAN PELT STOUT, C. E., Irrigation Engineering.
GEORGE ANDREW LOVELAND, B. S., LL. B., Meteorology.
WILLIAM PATTON SNYDER, M. S., Superintendent Experimental Substation, North Platte.

*By an act of the Legislature of the state of Nebraska, approved and in effect February 5, 1899, the state treasurer became *ex officio* custodian of the experiment station fund on and after July 1, 1899.

†Resigned.

‡Deceased.

VENUS WORRELL POOL, A. M., Assistant in Agricultural Botany.
ROBERT SAMUEL TRUMBULL, A. M., Assistant in Agricultural Chemistry.
PERCY BONSFIELD BARKER, A. B., Assistant in Soils.
THEODORE ALEXANDER KIESSELBACH, B. Sc., A. B., Assistant in Crop Agronomy.
LAZELLE BRANTLEY STURDEVANT, A. M., M. D., Assistant in Animal Pathology.
MYRON HARMON SWENK, A. M., Assistant in Entomology.
ROBERT FRANCIS HOWARD, B. S. in Agr., Assistant in Horticulture.
WILLIAM WESLEY BURR, B. Sc., Assistant in Soils and Crops, North Platte; Assistant Agriculturalist, Office Dry Land Agriculture, U. S. Department of Agriculture.
JAMES COWAN, M. M. E., Superintendent Experimental Substation, Valentine.
*FRITZ KNORR, B. Sc., Superintendent Experimental Substation, Mitchell.
SENATOR WILLIS PERIN, Farm Superintendent.
ERWIN HOPT, B. Sc., Assistant in Agronomy (Crops).
*LOUISE M. ALLEN, A. M., Scientific Assistant, Seed Testing.

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*Detailed by the United States Department of Agriculture.

## THE CENTRAL EXPERIMENT STATION

The Nebraska Agricultural Experiment Station, carried as a department of the College of Agriculture of the University of Nebraska, is maintained from funds appropriated by Congress, supplemented by state appropriations. Under the provisions of the Hatch Bill, each state and territory that had established an agricultural college under the land grant act of 1862 was offered funds to establish, in connection therewith, an agricultural experiment station. Nebraska assented to the conditions and was one of the states to receive immediate benefits from the act.

The work eontemplated by the law providing for these experiment stations is set forth as follows in section 2 of the act establishing the station:

SECTION 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under the varying series of crops; the capacity of new trees or plants for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.

On March 16, 1906, an act known as the Adams act became effective, granting increased support to the Experiment Station for purely technical investigations along the lines mentioned in the Hatch act under which the Experiment Station was established, and since the acceptance of this fund the Experiment Station has been conducting these technical lines of investigation in accordance with the act.

The central experiment station is located at the University Farm, except the Finance Office, which is located at the University campus. The farm comprises a tract of 320 acres located three miles east of the University, having street car connections. About one hundred acres is now laid off in experiment plats for field crops, fruits, and vegetables. The animals used for experiment are in a measure furnished from the herds of cattle, sheep and hogs used for instructional purposes. The offices of the Director and

of the departments of Animal Hubsandry and Agricultural Botany, the laboratories for investigation in Agricultural Botany and the Agricultural Library, are in Agricultural Hall. The offices of the departments of Experimental Agronomy and of Instructional Agronomy and Farm Managment, also of Agricultrual Chemistry and Entomology, and the laboratories for investigation in these lines are in Experiment Station Hall. The Departments of Horticulture, Dairy Husbandry and Animal Pathology have separate buildings.

## THE EXPERIMENTAL SUBSTATIONS

**North Platte Substation.** The Experimental Substation provided for by the Legislature of 1903 is located in Lincoln County, three miles south of North Platte, on a tract of 1,920 acres. This farm contains 270 acres of bench land with an elevation of about 2,800 feet. About 140 acres of this farm is level table-land with an elevation of 3,000 feet, the balance of the farm being rough canyon and table-land devoted to pasture. The experiments in crop and animal production upon this farm are comparable with nearly all the crop production and animal industry of central Nebraska. Experiments in crop production are conducted entirely without irrigation. Bulletins are published from time to time through the central experiment station.

**Valentine Substation (the Sand Hills Station).**—The Legislature of 1909 provided for an additional substation west of the second guide meridian and north of the sixth standard parallel. This station was located by the Regents, after due consideration, at Valentine, Nebraska, upon a portion of the Military Reservation adjoining the town to the southeast, a permanent lease being secured from the War Department to section 32, the west half of section 33, and that part of the southeast quarter of section 33 lying northwest of the Niobrara river,—all in township 24 north, range 27 west, in Cherry County, Nebraska. Upon request to the citizens of Valentine, a deed was given to the Regents for the University to 40 acres of land lying immediately west of section 32, being the northeast quarter of the southeast quarter of section 31, township 24 north, range 27 west, in Cherry County, Nebraska. A Superintendent's house and a barn have been erected upon the deeded land, the entire tract has been fenced, and preparations have been made to begin active experimental work in the spring of 1911.

**The Scotts Bluff Substation.** The Legislature of 1909 also provided for an appropriation to be used in co-operation with the United States Department of Agriculture to study irrigation methods and crop production in the North Platte Valley. 160 acres of land located on the southeast quarter of section 21, township 23 north, range 57 west, was selected for this

purpose and was withdrawn from entry by the Reclamation Service and assigned to the use of the United States Department of Agriculture and the Nebraska Experiment Station for the purposes above named. Experimental work in crop rotations, the application of water to the land, and other questions relative to the development of agriculture in the North Platte Valley are in progress. Work in dry land agriculture is also being studied on land which does not receive irrigation water.

## EXPERIMENT STATION BULLETINS

Each year the Station publishes at least four bulletins. These contain the results of investigations in subjects pertaining to agriculture. Many of these bulletins cover lines of technical investigation upon scientific subjects relating to agriculture. The reports of investigation at all substations are published through the central station. The edition of each bulletin varies from 8,000 or 10,000 in technical bulletins and from 25,000 to 30,000 or more in regular bulletins. An Annual Report of 5,000 copies is published, containing a summary of the work of the year, and experimental results of interest to investigators. The publications of the Station since those reported in the last calendar are as follows:

Bulletin No. 115, The Determination of Humus. By F. J. Alway, E. K. Files, and R. M. Pinkney. Distributed June, 1910. 5,000 copies.

Bulletin No. 116, Economical Beef Production. By H. R. Smith. Distributed December 15, 1910. 32,000 copies.

Bulletin No. 117 (Substation Bulletin No. 6), Growing Feeder Steers in Western Nebraska. By W. P. Snyder. Distributed January +, 1911. 32,000 copies.

Bulletin No. 118 (Substation Bulletin No. 7), Crop Production in Western Nebraska. By W. P. Snyder and W. W. Burr. Distributed +, 1911. 40,000 copies.

Bulletin No. 119.

Press Bulletin No. 32. Testing Seed Corn. By E. G. Montgomery and C. W. Pugsley. Distributed March 8, 1910. 105,000 copies.

Press Bulletin No. 33. Construction and Use of the Road Drag. By L. W. Chase. Distributed May 19, 1910. 50,000 copies.

Twenty-Fourth Annual Report. Presented to the Governor February 1, 1911.

The Experiment Station desires to assist the farmers of the state in solving many of the difficult and perplexing problems that affect our agricultural production, and to this end is carrying on investigations along lines that aid the practical farmer. The cooperation of all who are interested in the improvement of agricultural practice is invited.

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HOUSEHOLD SCIENCE

Series XVIII No. 8

# Bulletin of The University of Nebraska

## ANNUAL CATALOG

## OF THE

# COLLEGE OF AGRICULTURE

## ANNOUNCEMENT

## 1913-1914

Published by the University April 28, 1913

LINCOLN, NEBRASKA

The Bulletin of the University of Nebraska is published semi-weekly during the month of April, and monthly in May, June, August and November of each year by the University of Nebraska. Entered at the Post-Office at Lincoln, Nebraska, as second-class matter under Act of Congress July 16, 1894.

**The College of Agriculture** offers courses to all graduates of accredited high schools. Graduates of such a course should apply for entrance to the College and not to the Agricultural High School. A new agricultural group (the Agricultural Practice Group) is now offered for students who can spend but two years at the college of Agriculture. This College opens on September 17, 1913, and all students should present themselves for admission at that time.

**The Agricultural High School** is a high school in which agriculture is given special emphasis. Students from the farms or without sufficient high school credit to enter the College may enter this school. Graduation from this school does not lead to a degree, but courses are offered intended to specially qualify young men for practical farmers and young women for efficient home keepers. This course is not offered as a substitute for a college course, but as a substitute for a regular high school course. The year opens October 13, 1913, and those wishing to enter the school should present themselves at that time.

A separate catalog is issued for the four-year course in the Agricultural High School.

For further information, write to the Dean of the College of Agriculture, University Farm, Lincoln.

## COLLEGES AND SCHOOLS OF THE UNIVERSITY

The University of Nebraska comprises the following colleges and schools:

**The Graduate College**

The College of Arts and Sciences, including the School of Fine Arts

The Teachers College, including the Teachers College High School

**The College of Engineering**

The College of Agriculture, including the Schools of Agriculture

**The College of Law**

The College of Medicine, including the School of Pharmacy

The Nebraska Agricultural Experiment Station, the new Agricultural School at Curtis and the Experimental Substations at North Platte, Valentine and Scottsbluff, the Demonstration Farm at Culbertson, and the Agricultural Extension work are under the supervision of the Board of Regents of the University. The Lincoln Dental College has a contract with the University under which the sciences necessary for the degree in dentistry are taught at and by the University.

For separate catalogs or information regarding any of the above colleges or schools, address

THE REGISTRAR,
THE UNIVERSITY OF NEBRASKA,
Lincoln, Nebraska.

## THE UNIVERSITY YEAR

The regular session of the University embraces thirty-nine weeks, beginning the third Wednesday of September, and is divided into a first and a second semester. A summer session of eight weeks immediately follows the close of the second semester class work. Instruction is offered from September to August.

To enter any session, one must be able either to present the minimum admission requirements to the University or to meet the conditions for "Adult Special" registration.

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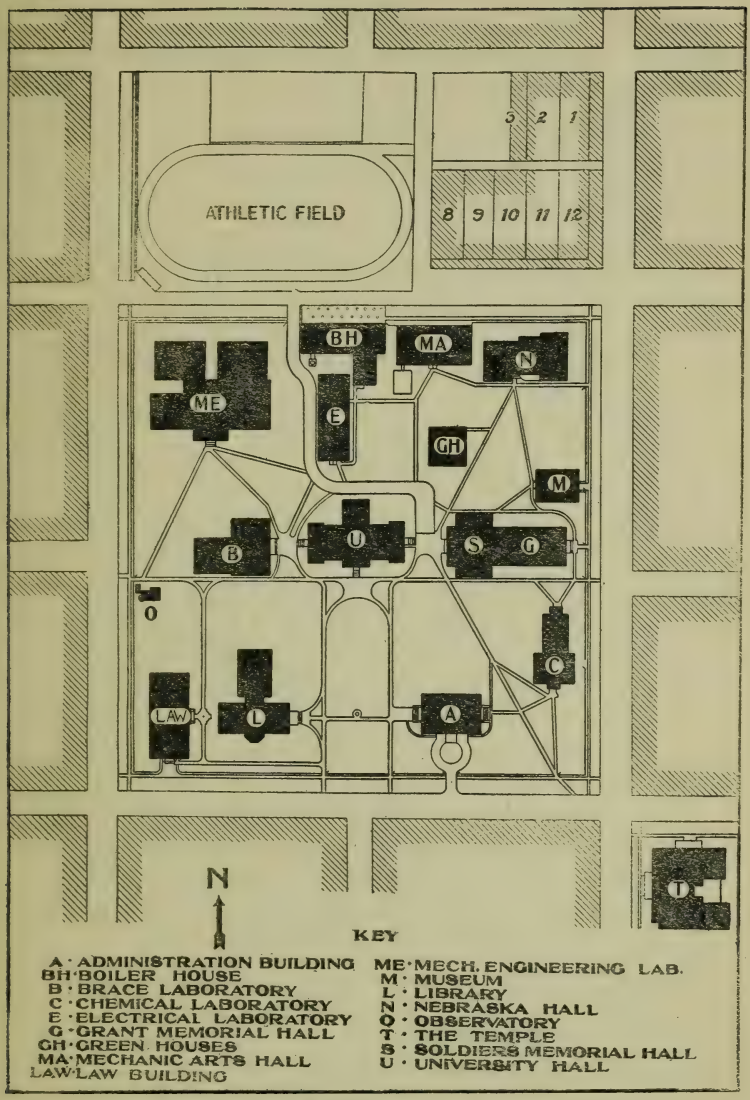
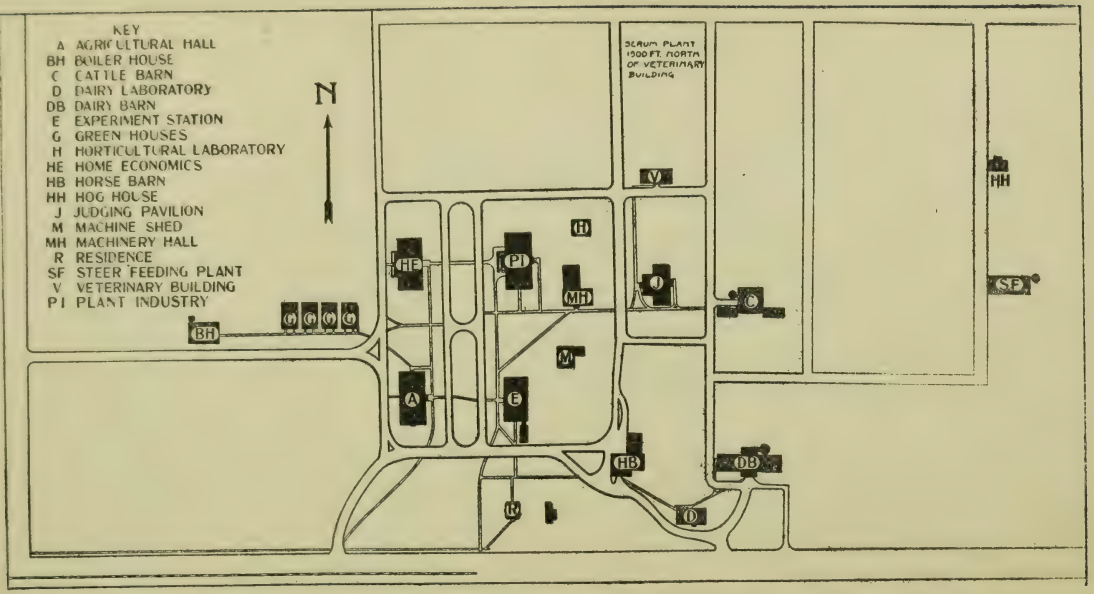



THE UNIVERSITY CAMPUS IN THE CITY




THE UNIVERSITY OF NEBRASKA FARM CAMPUS.

## CALENDAR FOR THE COLLEGE OF AGRICULTURE

### 1913

| | | |
|---|---|---|
| September 15-20 | Monday-Saturday | Entrance examinations. |
| September 17-20 | Wednesday-Saturday | First semester registration. |
| September 20 | Saturday, 8 p. m. | University reception to all students. |
| September 23 | Tuesday, 11 a. m. | Opening address by the Chancellor |
| *October 13 | Monday | Agricultural High School, first semester begins. |
| November 26 | Wednesday, 12 m. | Thanksgiving recess begins. |
| November 29 | Saturday, 12 m. | Thanksgiving recess ends. |
| December 9 | Tuesday | Regular meeting of the Board of Regents. |
| December 23 | Tuesday, 6 p. m. | Christmas holidays begin. |

### 1914

| | | |
|---|---|---|
| January 3 | Saturday, 12 m. | Christmas holidays end. |
| January 26 | Monday | Agricultural High School, second semester begins. |
| January 26-31 | Monday-Saturday | Entrance examinations. |
| January 28-31 | Wednesday-Saturday | Second semester registration. |
| February 2 | Monday | Second semester classes begin. |
| February 15 | Sunday | Charter Day. |
| February 16 | Monday | A holiday. Regular meeting of the Board of Regents. |
| March 16 | Monday, 8 a. m. | Spring recess begins. |
| March 21 | Saturday, 12 m. | Spring recess ends. |
| April 7 | Tuesday | Regular meeting of the Board of Regents. |
| April 24 | Friday, 8 p. m. | Agricultural High School Commencement. |
| June 8 | Monday, 4 p. m. | Final recommendations for degrees by faculties. |

### Commencement Week

| | | |
|---|---|---|
| June 7 | Sunday | Baccalaureate sermon. |
| June 9 | Tuesday | Regular meeting of the Board of Regents. |
| June 10 | Wednesday | Alumni Day. Class Day. |
| June 11 | Thursday | Forty-third Annual Commencement. |
| June 12 | Friday | Registration for the Summer Session. |
| September 16 | Wednesday | First semester begins (1914-15). |

* A separate catalog is published of the four-year course in the Agricultural High School.

## OFFICERS OF ADMINISTRATION AND INSTRUCTION

SAMUEL AVERY, Ph. D., LL. D., Chancellor of the University.

JAMES STUART DALES, M. Ph., Secretary of the University.

EDWARD MARKWOOD RUTLEDGE, A. B., Registrar and University Publisher.

EDGAR ALBERT BURNETT, B. Sc., Dean of the College of Agriculture and Director of Experiment Station. Agriculturall Hall 203.

CHARLES EDWIN BESSEY, Ph. D., LL. D., Head Professor of Botany and Head Dean of the University.

LAWRENCE BRUNER, B. Sc., Head Professor of Entomology and State Entomologist. Plant Industry Hall 208.

FREDERICK JAMES ALWAY, Ph. D., Head Professor of Agricultural Chemistry. Experiment Station Hall.

EDWIN MEAD WILCOX, Ph. D., Head Professor of Agricultural Botany. Plant Industry Hall 304.

LEON WILSON CHASE, B. Sc. in M. E., Head Professor of Agricultural Engineering. Machinery Hall.

GEORGE EVERT CONDRA, Ph. D., Head Professor of Geography and Conservation. Director State Conservation and Soil Survey. University Hall 2.

CHARLES WILLIAM PUGSLEY, B. Sc., Superintendent of Agricultural Extension and Head Professor of Farm Management. Agricultural Hall 204.

JULIUS HERMAN FRANDSEN, M. S. A., Head Professor of Dairy Husbandry. Dairy Hall.

HARRY ELWYN BRADFORD, A. B., Principal of the Agricultural High School and Professor of Secondary Agricultural Education. Agricultural Hall 207.

RALPH KENNETH BLISS, B. S. A., Professor of Animal Husbandry. Agricultural Hall 103.

ROLLINS ADAMS EMERSON, B. Sc., Professor of Horticulture. Plant Industry Hall 105.

ALICE MARIE LOOMIS, M. A., Professor of Home Economics. Home Economics Hall.

EVERETT NEWTON BOWMAN, First Lieutenant 4th Infantry, U. S. A., Commandant of Cadets and Professor of Military Science. Grant Memorial Hall.

JAMES HARRISON GAIN, M. D. C., Professor of Animal Pathology. Veterinary Hall.

WALTER JEAN MORRILL, M. F., Professor of Forestry. Nebraska Hall 105.

WILLIAM PATTON SNYDER, M. S., Superintendent of North Platte Experimental Substation.

THEODORE ALEXANDER KIESSELBACH, A. M., Professor of Experimental Agronomy. Plant Industry Hall 202.

PERCY BOUSFIELD BARKER, A. M., Professor of Instructional Agronomy. Experiment Station Hall.

WILLIAM WESLEY BURR, B. Sc., Soils, Associate in Crops. North Platte.

ALICE BAIRD ENSIGN, A. B., Adviser to Women.

MYRON HARMON SWENK, A. M., Associate Professor of Entomology and Assistant State Entomologist. Plant Industry Hall 206.

GEORGE ANDREW LOVELAND, A. M., LL. B., Associate Professor of Meteorology and Section Director United States Weather Bureau. Brace Laboratory.

HOWARD JOHN GRAMLICH, B. Sc., Assistant Superintendent of Agricultural Extension. Associate Professor of Animal Husbandry (Horses). Agricultural Hall 204.

JULIA EMMELINE LOUGHRIDGE, A. B., Assistant Principal of the Agricultural High School and Adjunct Professor of Mathematics. Agricultural Hall 207.

LAZELLE BRANTLEY STURDEVANT, A. M., M. D., Assistant Professor of Animal Pathology. Veterinary Hall.

FRED JOHNSON, B. Sc., D. V. S., Superintendent of Serum Plant.

CHARLES BOSS LEE, B. Sc., Assistant Professor of Animal Husbandry. Agricultural Hall 104.

ELLIS RAIL, B. Sc. A., Assistant Professor of Animal Husbandry. Agricultural Hall 104.

ERWIN HOPT, B. Sc., Assistant Professor of Agronomy (Crops). Stock Judging Pavilion.

JOHN RALPH COOPER, B. Sc., Assistant Professor of Horticulture. Plant Industry Hall 102.

NELS AUGUST BENGTSON, A. M., Assistant Professor of Geography and Conservation. University Hall 1.

HORACE CLYDE FILLEY, A. M., Assistant Professor of Farm Management. Agricultural Hall.

ROBERT SAMUEL TRUMBULL, A. M., Adjunct Professor of Agricultural Chemistry. Experiment Station Hall.

GEORGE KONRAD KARL LINK, A. M., Adjunct Professor of Agricultural Botany. Plant Industry Hall 304.

* WILLIAM JACOB DUPPERT, M. S. F., Adjunct Professor of Forestry. Nebraska Hall 105.

HELEN LEE DAVIS, A. B., B. Sc., Adjunct Professor of Home Economics. Home Economics Hall.

ANNA MARGRETA OLSEN, B. S., Adjunct Professor of Home Economics. Home Economics Hall.

FLORA BULLOCK, A. M., Adjunct Professor of English.

ALVA ALDUS BAER, A. B., Adjunct Professor of Agricultural Engineering.

LAURENCE FROYD SEATON, B. Sc. in M. E., Adjunct Professor of Agricultural Engineering. Machinery Hall.

GEORGE CLEVELAND WHITE, A. M., Assistant Professor of Dairy Husbandry. Dairy Hall.

HORACE JAMES YOUNG, B. Sc. in Agr., Instructor in Agronomy. Experiment Station Hall.

IVAN DALEY WOOD, B. Sc. in A. E., Instructor in Agricultural Engineering. Machinery Hall.

CARRIE BELLE RAYMOND, Director of Music.

ORPHA ELLEN NESBIT, A. B., Instructor in Home Economics. Home Economics Hall.

MARY VIRGINIA ZIMMER, A. B., Instructor in Mathematics. Agricultural Hall.

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* Resigned.

GRACE RICHARDS, A. B., Instructor in Home Economics. Home Economics Hall.

MARY-ELLEN BROWN, B. S., Instructor in Home Economics. Home Economics Hall.

MABEL MAUD HEDGES, A. B., Instructor in Home Economics. Home Economics Hall.

GLAIDETH GAINEVERE DENNY, A. B., Instructor in German and History. Agricultural Hall.

EDITH VIOLET OHLSEN, B. Sc., Instructor in Home Economics. Home Economics Hall.

BERNA ANNA MISKELL, B. Sc., Instructor in Home Economics. Home Economics Hall.

ROBERT LEO MOORE, Instructor in Agricultural Engineering. Machinery Hall.

CHAUNCEY WILLIAM SMITH, Instructor in Physics, Agricultural High School. Agricultural Hall.

ROY WESLEY EATON, Instructor in Normal Training, Agricultural High School.

EDGAR ALEXANDER MARKHAM, Assistant in Dairy Husbandry.

ESTHER MOSHER BURRITT, A. B., Assistant in English. Agricultural Hall.

JAMES COWAN, M. E., Superintendent Experimental Substation, Valentine.

FRITZ KNORR, B. Sc., Superintendent Experimental Substation, Scottsbluff.

SENATOR WILLIS PERIN, Farm Superintendent.

HOMER LEROY NYE, Foreman Demonstration Farm, Culbertson.

### Fellows, Scholars, and Graduate Assistants

GUY RAYMOND McDOLE, A. M., Assistant in Agricultural Chemistry.

CLAYTON ORD ROST, A. B., Assistant in Agricultural Chemistry.

JOHN ANDERSON RATCLIFF, A. B., Assistant in Experimental Agronomy.

MORRIS JOSLIN BLISH, B. Sc., Laboratory Assistant in Agricultural Chemistry, Agricultural High School.

ARTHUR JAY LUDDEN, A. M., Assistant in Physics.

RALPH WARD DAWSON, B. Sc., Assistant in Entomology.

EDWIN LOVEJOY CURRIER, B. Sc., Assistant in Agronomy.

THOMAS WESLEY MOSELEY, B. Sc., Assistant in Agricultural Botany.

JAMES LLOYD THOMAS, B. Sc., Assistant in Agronomy.

HARVEY ELMER VASEY, Assistant in Agricultural Botany.

JOSEPH BENJAMIN KUSKA, Assistant in Agronomy.

ARTHUR GREY GEORGE, Assistant in Agronomy.

### Standing Committees of the Faculty

Course of Study—Professor Bradford (chairman), Professors Bruner, Wilcox, Chase, Frandsen, Morrill, Loomis, Barker.

Farmers' Institutes—Professor Pugsley (chairman), The Dean, Professors Emerson, Kiesselbach.

Schedule of Classes—Professor Chase (chairman), Professors Bradford, Loughridge, the Registrar.

Advanced Standing—The Chancellor (chairman), the Dean, and the Inspector of High Schools

## PURPOSE OF THE COLLEGE OF AGRICULTURE

The College of Agriculture was established by an act of the legislature of 1909, reorganizing the colleges within the University. The purpose of this college is (1) to provide thorough instruction in the technical agricultural sciences (including Forestry), (2) to aid in the promotion of agriculture through its secondary Schools of Agriculture, its Experiment Stations, and its Agricultural Extension work, and (3) to promote household arts through its department of Home Economics.

## GROUPS OF STUDY

The **Agricultural Science Group** meets the needs of those students who wish to prepare themselves for the pursuit of scientific investigation along some line in agriculture, such as agricultural botany, agricultural chemistry, agronomy, animal husbandry, animal pathology, dairy husbandry, entomology, forestry, horticulture, and other technical subjects related thereto. This group should also appeal to those who desire to prepare themselves for teaching in high schools or in agricultural colleges and who desire agricultural training to meet the demands of the schools requiring that instruction be given in agriculture. As a course in general education for students who expect to follow business pursuits or to continue still further the study of some technical agricultural subject, this course is offered as a suitable foundation.

The **Agricultural Practice Group** meets the needs of those students who come to the college for one or two years with expectation of returning to the farm at the expiration of that time and who wish to get a large amount of agriculture in the early part of the course.

The work of the first two years correlates with that of the latter years so that the student can complete his course for a degree in four years.

This group is not intended for those who wish to pursue scientific research. Such persons should take the agricultural science group.

To those who desire an education which will put them in touch with the leading industrial activities of the state and fit them to become leaders in the community this course will prove efficient.

**Forestry Group.** This group is designed to prepare men for either general or technical work in forestry. The sequence of the courses during the first three years is arranged to give a basis for a broad education and at the same time to give a good scientific foundation leading to the more

technical courses in forestry. While the group is intended primarily for foresters, many of the courses may be taken by students in general collegiate work or by students specializing in other lines, who desire a knowledge of some particular line of forestry.

The **Home Economics Group** leads to the degree of Bachelor of Science in Home Economics. Besides those subjects which have to do especially with the home, it includes studies in science, language, history, and other branches affording a good general education. This department is housed in Home Economics Hall, situated on the University Farm. The hall is a three-story brick building, equipped to provide practical instruction in cooking, sewing, and house management.

## FACILITIES FOR INSTRUCTION

To illustrate properly the work in the various departments in agriculture, the college is provided with a farm of 320 acres which is used for experimental purposes and to illustrate methods in farm practice, showing the effect of rotations and methods of treatment on the physical and chemical properties of the soil and on its productiveness. The department of Horticulture maintains an extensive orchard and garden for demonstrating horticultural methods and practices. The departments of Animal Husbandry and Dairy Husbandry keep extensive herds for instruction in types of farm animals. The agricultural plant, aside from lands, consists of eight main buildings and several barns and accessory buildings to complete the work and efficiency of the plant. Agricultural Hall is used for administration, library, and general class rooms. Experiment Station Hall furnishes laboratories for Soils, Physics, and Agricultural Chemistry. The Judging Pavilion furnishes stock judging laboratories and grain judging laboratories, with exceptional facilities for work. The Agricultural Engineering buildings furnish laboratories in forge work, wood work, and farm machinery. Plant Industry Hall furnishes class and laboratory facilities for Horticulture, Entomology, Agricultural Botany and Experimental Agronomy. Dairy Hall furnishes laboratories for instruction in buttermaking and cheesemaking, supplemented by a herd of exceptional efficiency to demonstrate the best dairy practice. Home Economics Hall furnishes laboratories for instruction in cooking and in household art. All of the technical departments giving instruction have excellent laboratory facilities and depend upon the laboratory method to give definiteness and efficiency to their instruction.

## ADMISSION TO THE COLLEGE OF AGRICULTURE

**Entrance Credits.** For admission to the Freshman year of the College of Agriculture the candidate must present 30 entrance credits or "credit points" from an accredited secondary school, of which he must be a graduate. Conditional admission will be permitted on a minimum of 28 credits or "points" from an accredited secondary school, of which the student must be a graduate. Graduates from the University Preparatory Course in the Agricultural High School are admitted to full Freshmen standing without examination. Students who have graduated from an accredited three-year high school with less than 28 "credit points" by registering in the Agricultural High School may, upon the satisfactory completion of one year's work, offer his combined credits in the two schools for entrance into the Freshman year of the Agricultural College.

A student admitted conditionally to the College with but 28 "credit points" must remove these conditions at the earliest opportunity. A degree will not be granted until such conditions are removed.

The following table indicates the entrance requirements to the College of Agriculture from accredited high schools. A graduate of a fully accredited high school or academy upon presenting a certificate is admitted without examination to any class for which he is fully prepared:

| Required Subjects—(18 points). | Points |
|---|---|
| English | 4 |
| History (European) (*a*) | 2 |
| Language (Foreign) (*b*) | 6 |
| Mathematics | 4 |
| Science (Laboratory) (*c*) | 2 |
| Elective Subjects—(In addition to above). | |
| Subjects taught in an approved manner in an accredited secondary school | 12 |
| Total | 30 |

(*a*) History: It is recommended that Greek and Roman History be offered in meeting the European History requirement.

(*b*) Language: A third year of Mathematics or a second year of laboratory science may be offered in place of a third year of Language.

(*c*) Science: Both Physics and Chemistry are desirable for entrance to this College.

An "entrance credit" or "credit point" means the work of a class holding five recitations a week, of 40 to 50 minutes each, for at least

eighteen weeks. In laboratory courses, a "credit point" means three recitations and two double periods of laboratory work (under the supervision of an instructor) each week for at least eighteen weeks.

**Entrance From the Agricultural High School.** All students who have completed the University Preparatory course in the Agricultural High School are admitted to the College of Agriculture without examination. Young women graduating in Home Economics from the Agricultural High School are admitted to the Home Economics group of the College of Agriculture.

**Entrance From Non-Accredited Schools and Colleges.** Any candidate for admission having credentials from a high school, college, or university not included in the list of schools accredited to this University should forward his credentials to the Registrar and be prepared to take such examinations as may be prescribed. If such credentials do not clearly show the number of weeks' study and the number of recitations a week, together with the time devoted to laboratory work, if any, the prospective students should apply to the Registrar for blank credential slips. These should be properly filled out and returned, when he will be informed at once whether his credentials are or are not acceptable.

**Adult Special Students.** Students over twenty-one years of age, not candidates for degrees, may register in the College of Agriculture without conforming to the entrance requirements. The admission of adult special students is permitted after consultation with and upon the recommendation of the Dean. Such students must pay all necessary fees. Upon fulfilling the entrance requirements, adult special students may register as regular students, and become candidates for the degree.

**Registration at the University Armory on the City Campus.** Registration in the College of Agriculture takes place during the first four days of each semester, from 9 a. m. Wednesday to 5 p. m. Saturday. To promote prompt registration, a registration fee of $3.00 is charged a student who, without good reason, fails to register within the days set aside for this purpose.* A like fee is charged for the re-registration when made necessary by the student's fault; any change whatever in a registration

* Properly prepared students who are unable to enter at the beginning of the year are admitted later; but all students who can possibly do so are urged to be present at the beginning of the year, as students entering later are at much disadvantage, and cannot expect to finish the course within the minimum limit except by taking work in the Summer Session.

once made is regarded as a re-registration. A student changing from one college to another must pay a new matriculation fee of $5.00, and no student is allowed to make such a change without written permission to the Registrar from the Dean of each college concerned.

No student is allowed to change his group or drop any study for which he has been regularly registered without written permission from the Dean of the college. No regular student is permitted to register for less than twelve (12) hours without special permission from the Dean. No first year student may register for more than 16 credit hours except by written consent of the Dean, and then for a maximum of 17 hours. Second to fourth year students may register for 18 hours credit if they have completed 16 hours with an average grade of 80 per cent or above, the previous semester. No first year student may register for more than one 1-hour course (in addition to drill or Physical Education) in any one semester, and no second to fourth year student may register for more than two such courses in any one semester. A student cannot attend a class for which he is not registered, and no credit will be granted for studies pursued without registration.

## FEES AND EXPENSES

**Fees.** All fees and charges are payable in advance to the Secretary of the University. No fees can be refunded to a student after the beginning of the fourth week from the date of his registration save for causes beyond the student's control. In the latter instances the refund can be made only upon written application to the Registrar, stating reasons, and presented at the time of withdrawal from a class or from the University. The schedule of fees in the College of Agriculture is as follows:

Matriculation (paid only on first registration) ..... $5.00
Being a statutory fee, this cannot be refunded except when collected through error.

Non-resident (charged to each person not a resident of the state), each semester ..... 15.00

Incidental, each semester ..... 3.00

Library (charged to each student who does not pay a laboratory fee), each semester ..... 1.00

Special registration (for late registration or re-registration) ..... 3.00

Special examination, each course ..... 1.00

Diploma, first degree ..... 5.00

Diploma, advanced degree.....$10.00
Additional Diploma fee if degree is taken *in absentia*..... 10.00
Certificate ..... 1.00

LABORATORY FEES

Agricultural Chemistry—Course 1, $3; 2, $4; 3, $1; 4, $2.
Agricultural Engineering—Courses 1, 2, 11, $3; 3, 5, 6, $1; 4, 18, $2; 9, 10, 12, 16, $4; 13, $5.
Botany—Courses 1, 2, 21, 22, 25, $2; 13, 14, $1; 6, 19, 20, $3.
Chemistry—Courses A, B, 1, 2, D*a*, 3*a*, $5; 14, $8; 3, $10.
Civil Engineering—Courses 5*a*, 30, $3.
Dairy Husbandry—Courses 2, 3, 6, $3.
Entomology—Courses 1, 2, 5, 6, 7, 8, $2; 3, 4, 9, 10, 11, 12, 13, $1.
Forestry—Courses 3, 4, 5, $2.
Geography—Courses 1, 2, 6, $1.
Geology—Course 1, $1.
Home Economics—Courses 1, 2, 7, 8, 11, 12, 15, 16, $2; 3, 4, $3; 5, 6, $5.
Physics—Courses 11, 12, $4.
Physiology—Courses 1, 2, $5.

**Expenses.** In Lincoln, board and lodging may be secured in private families from $3.50 to $5 a week. There are also numerous student clubs. The Young Men's Christian Association and The Young Women's Christian Association of the University keep lists of boarding places. The Young Men's Christian Association of the University also maintains under the direction of the Registrar an employment bureau, the services of which are free to all students. In a city the size of Lincoln there are many opportunities for students to defray at least a part of their expenses. The University does not, however, guarantee employment. Uniforms costing about $15 are required for military drill.

## REQUIREMENTS FOR GRADUATION

**University Credits.** For the degree of Bachelor of Science, 125 University "credit hours" are required.* No student is recommended for a degree who is not within 18 hours of this requirement at the beginning of his last semester.

* A course receives one "credit hour" for each one-hour recitation or lecture and two-hours preparation or laboratory period it demands for each of the eighteen weeks of a semester.

**Required Subjects.** Each candidate for the degree of Bachelor of Science in the College of Agriculture must complete the following subjects:

| For the Agricultural Science Group: | Hours |
|---|---|
| Modern Language (French or German) or Ancient Language for women | 10 |
| * Biology (Botany, Entomology or Zoology) | 10 |
| Physical Science (Chemistry or Physics) | 8 |
| Biological, Physical, or exact Science | 10 |
| English (Rhetoric 1, 2, and 6 hours of Rhetoric or English literature) | 10 |
| History, Political Science, Philosophy or Economics | 6 |
| Military Science for men or Physical Training for women | 4 |
| † Agricultural Subjects | 40 |
| Total | 98 |

| For the Agricultural Practice Group: | Hours |
|---|---|
| Chemistry | 10 |
| Botany, Entomology, or Zoology, (two required) | 12 |
| Physics or Rhetoric | 6 |
| English, (Rhetoric and English) | 10 |
| Modern Language, English Literature, History, or Sociology | 14 |
| Political Economy | 5 |
| Drill | 4 |
| Meteorology | 2 |
| Agriculture (in major subjects 16 hours) | 40 |
| Total | 103 |

| For the Forestry Group, for students registering 1913 and after: | |
|---|---|
| Chemistry and Physics | 13 |
| Mathematics | 15 |
| Biological Science—Botany, Entomology, and Zoology | 27 |
| Forestry | 27 |
| Modern Language | 13 |
| Rhetoric and English Literature | 12 |
| Total | 107 |

* In Home Economics Course, Physiology and Bacteriology are included in this group.

† This requirement does not hold for the Home Economics Group.

**Science Requirement.** No student will be granted a degree from the College of Agriculture who has completed less than 60 hours of science, which may include Agriculture or Home Economics. Students selecting the Agricultural group will be required to complete 40 hours of agricultural subjects, to be taken in not less than three departments. Students selecting the Forestry group will be required to complete 40 hours of Botany and Forestry. Students selecting the Home Economics group will be required to complete 30 hours of Home Economics.

**Military Drill Required.** Four hours of military science (courses A1, A2, AA1, AA2) are required of all men students. Only credibly attested physical disability, or membership in a religious organization whose creed forbids participation in warfare in any form (on the part of parent in case of a minor), are accepted as excusing from the requirement in military science. Those excused for conscientious scruples are required to do work in Physical Education equivalent in amount. Unless excused or reprieved, each undergraduate man must fulfill this requirement in freshman and sophomore years. A man excused from this requirement (whatever the reason) must still, in order to graduate, obtain the full number of hours credit required of other candidates for the degrees sought. Thorough drill elsewhere than at the University may, as in the case of any other study, on evaluation, be credited to a student in lieu of a like amount of military science at the University. Such credit by commutation, however, in no case exceeds a total of four hours.

**Major Subjects.** Not later than the beginning of his second year each student in the College of Agriculture must select some one department of the college in which he will take a major of not less than 16 hours nor more than 35 hours.

**The University Teachers' Certificate** is granted only (1), to those who maintain an average of at least 80 per cent in their undergraduate work, and (2), show special fitness for teaching. Special requirements of this certificate are:

1. The candidate must hold the Bachelor's or Master's degree from the University.
2. Completion of Philosophy 1 and 2.
3. Completion of 15 hours in Education as follows:

| | Hours |
|---|---|
| Education 1 and 2 (History of Education) | 6 |
| Education 4 (Child Study) | 3 |
| Electives in Education | 2 |
| Home Economics 13 and 14 (accepted in place of Education, Theory and Practice 2 hours, Special Methods 2 hours) | 4 |
| Total | 15 |

4. A major of not less than 20 hours and a minor of not less than 12 hours may be taken in the subjects of Domestic Science and Domestic Art.

**The City State Teachers' Certificate for Supervisors in Home Economics.** The requirements for this certificate are the same as above except that 12 hours instead of 15 hours are required in Education, and instead of 6 hours of History of Education 1 and 2, only three hours of this course or its equivalent in Educational Classics are required.

**Advisers.** At the time of his first registration each Freshman student in the College of Agriculture is assigned by the Dean to some member of the Faculty, who becomes his adviser during the Freshman year. When, at the beginning of his second year, a major subject is chosen, the head of the department in which the major work is taken becomes the adviser of the student until the time of his graduation. The dean of the college constitutes a head adviser for each student within the college. The Adviser to Women is a special adviser to all women students in the college.

**Absence or Withdrawal.** A leave of absence for a short time may be granted a student by the Dean. This leave is merely a justification for absence and not an excuse from any work. Students not previously excused shall make request for excuse for absence within two weeks after the absence ceases. If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a semester, the Registrar grants him permission to do so. Students in good standing who are not minors are given honorable dismissal from the University at their own request; minors, at the request of their parents or guardians.

## ORDER OF COURSES IN THE GROUPS OF STUDY

### THE AGRICULTURAL SCIENCE GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Biology (Botany,† Entomology or Zoology‡) (A and S) | 3 | 3 |
| Chemistry 1, 2, (A and S) ‡ | 2 | 2 |
| French or German (A and S) ‡ | 5 | 5 |
| Rhetoric 1, 2 (A and S) ‡ | 2 | 2 |
| Military Drill | 1 | 1 |
| * Agricultural Subjects— | | |
| First semester: Choice of Animal Husbandry 1 (Judging) and 3 (Study of Breeds), Agronomy 1 (Forage Crops), Horticulture 2 (Orcharding), Dairy 1 (Milk Production), Agricultural Engineering 9 (Wood Work) or Geography 1 | 3 or 4 | |
| Second Semester: Choice of Animal Husbandry 2 (Judging), Agronomy 2*a* and 2*b* (Cereal Crops), Horticulture 4 (Vegetable Gardening), Dairy 2 (Butter Making), Agricultural Engineering 10 (Forge Work) or Geography 2 | | 2, 3, or 4 |
| | 16 or 17 | 15 to 17 |
| SECOND YEAR | | |
| * Agricultural Subjects | 3 | 3 |
| French or German (if four points foreign language have not been offered for entrance on admission to the college), or Natural, Physical or Exact Science or Agricultural Subjects | 5 | 5 |

* The "Agricultural Subjects" include Agricultural Botany, Agricultural Chemistry, Agricultural Engineering, Agricultural Geography, Agronomy, Animal Husbandry, Dairy Husbandry, Forestry, Geography, Horticulture, Economic Entomology, Agricultural Education.

† Graduates of the Agricultural High School who have completed, in Botany, 9 hours' work in class and practice, shall take Botany 3 and 4; others shall take courses 1 and 2.

‡ Required courses not given in the College of Agriculture are marked with the initials of the College in which they are offered; e. g., (A and S) indicates that the subject is offered in the College of Arts and Sciences, (E) refers to the College of Engineering.

| | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Rhetoric 5 and 6 or English Literature (A and S)*.... | 3 | 3 |
| Chemistry 3 or Physics 11 and 12, Biology (Botany, Entomology or Zoology) (A and S)*.....3 or | 4 | 4 |
| Military Drill ..... | 1 | 1 |
| | 17 or 16 | 16 |
| THIRD YEAR | | |
| † Agricultural Subjects ..... | 7 | 7 |
| Electives ..... | 6 | 5 |
| History, Political Economy or Philosophy (A and S)*.. | 3 | 3 |
| | 16 | 15 |
| FOURTH YEAR | | |
| † Agricultural Subjects ..... | 7 | 7 |
| Electives ..... | 8 | 8 |
| | 15 | 15 |

## AGRICULTURAL PRACTICE GROUP

### Offered at the University Farm

This group is offered for students who can attend the College for only one or two years and for those who expect to return to the farm rather than enter teaching or research work.

| FIRST YEAR<br>Required Subjects— | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Chemistry A or 1 and B or 2.....3 or | 2 | 3 or 2 |
| Agricultural Botany 5 and 6 or Economic Entomology 3 and 4..... | 3 | 3 |
| Rhetoric 1 and 2 ..... | 2 | 2 |
| Drill ..... | 1 | 1 |
| ‡ Elective Subjects, to make 16 hours— | | |
| Animal Husbandry 1 (Judging)..... | 2 | |
| Animal Husbandry 3 (Breeds) and 4 (Feeding).... | 2 | 3 |

* See foot-note (‡) on p. 22.

† See foot-note (*) on p. 22.

‡ Students taking this group must choose elective subjects in three Departments, with a view of continuing studies in at least one of these Departments throughout the second year as a basis for the selection of a Major subject.

| * Elective Subjects, to make 16 hours— | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Agronomy 1 (Forage Crops), and 2*a* and 2*b* (Cereals) | 3 | |
| Horticulture 2 (Orcharding) and 4 (Vegetable Gardening) | 3 | 3 |
| Dairying 1 (Milk Production) and 2 (Butter Making) | 3 | 3 |
| Agricultural Engineering 9 (Wood Work) and 10 (Forge Work) | 3 | 3 |

No person can enter upon the second year of this group unless he has lived for one year upon a farm since he was fourteen years of age or has actual experience in some special line of farm or garden operations.

| Required Subjects— SECOND YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Organic and Agricultural Chemistry (new courses) | 3 | 3 |
| Physics 11 and 12 or Rhetoric 5 and 6 | 3 | 3 |
| Drill | 1 | 1 |
| † Elective Subjects, to make 16 hours— | | |
| Agronomy (Soils) 7 and 9 and 8 and 10 | 4 | 4 |
| Farm Management 3 and 4 | 3 | 3 |
| Agricultural Engineering 1 (Farm Machinery) and 2 (Farm Motors) | 2 | 2 |
| Animal Husbandry 5 (Feeding) and 2 (Judging) | 2 | 2 |
| Animal Pathology 2 | 3 | |
| Dairying 3 (Milk Testing) and 4 (Judging) | 2 | 1 |
| Horticulture 3 (Apple Judging) and 6 (Ornamental Gardening) | 2 | 2 |
| Meteorology (Geography 4) | 2 | |
| Lands (Geography 1) | | 2 |

All subjects offered at the University Farm, except Physics 11 and 12.

| THIRD YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Political Economy 1 (Principles of Political Economy) and 10 (Economic History of the United States) or 14 (Economics of Agriculture) | 3 | 2 or 3 |

* See foot-note (‡) on p. 23.

† Students registering in a new Department at the beginning of the second year should be registered in the subjects offered by that Department in the first year.

| | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Rhetoric 5 and 6 or English Literature | 3 | 3 |
| History or Sociology | 3 | 3 |
| Agricultural Botany, Entomology, or Zoology | 3 | 3 |
| Agriculture (in major subject) | 3 to 5 | 3 to 5 |
| Electives to make 16 hours | 1 or more | 1 or more |

FOURTH YEAR

| | | |
|---|---|---|
| Modern Language, English Literature, or Sociology (two or three subjects) | 7 | 7 |
| Agriculture to complete major subject | | |
| Electives to complete 125 hours for graduation | 8 | 7 |

## FORESTRY GROUP

FIRST YEAR

| | | |
|---|---|---|
| Forestry 1, 2 | 1 | 1 |
| German 1, 2, or French 1, 2, or Spanish 31, 32* | 5 | 5 |
| Botany 1, 2 | 3 | 3 |
| Chemistry 1, 2 * | 2 | 2 |
| Rhetoric 1, 2 * | 2 | 2 |
| Geography 1, 2 | 2 | 2 |
| Military Drill | 1 | 1 |
| | 16 | 16 |

SECOND YEAR

| | | |
|---|---|---|
| Forestry 3, 4 | 2 | 3 |
| German 3 or French 3 or Spanish 33* | 5 or 3 | |
| Botany 13, 14 | 2 | 2 |
| Botany 6 | | 3 |
| Mathematics 1 | 5 | |
| Physics 11, 12 * | 3 | 3 |
| Geography 4 | | 2 |
| Lettering and Drawing † | | 2 |
| Military Drill | 1 | 1 |
| | 16 | 16 |

* Given in the College of Arts and Sciences.

† Given in the Engineering College.

| THIRD YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Timber Physics * | | 2 |
| Forestry 7, 8 | 2 | 2 |
| Forestry 5 | 2 | |
| Botany 19, 20 | 3 | 3 |
| Surveying 5, 5*a*, 30 * | 4 | 3 |
| Rhetoric 5, 6 † | 3 | 3 |
| Rhetoric 41 | 2 | |
| Geology 31 † | | 2 |
| | 16 | 15 |
| FOURTH YEAR | | |
| Forestry 11, 12, 12*a*, 12*b* | 3 | 3 |
| Forestry 14 | | 3 |
| Forestry 15 | 2 | |
| Railway Surveying (Civil Eng. 8)* | | 3 |
| Botany 21, 22 | 2 | 2 |
| Forest Zoology 13† and Entomology 11 | 3 | 3 |
| Geology 33 † | 2 | |
| Electives ‡ | 2 | 2 |
| | 14 | 16 |

PROFESSIONAL COURSE LEADING TO DEGREE OF MASTER OF FORESTRY

| | | |
|---|---|---|
| Forestry 17, 17*a* | | 1 |
| Forestry 19, 20, 20*a* | 3 | 3 |
| Forestry 21, 22 (Thesis) | 2 | 2 |
| Forestry 23, 24 | 2 | 2 |
| Forestry 25, 26 | 2 | 2 |
| Forestry 28 | | 1 |
| Forestry 30 | | 1 |
| Forestry 31 | 2 | |
| Rhetoric 13, 14 | 3 | 3 |
| Forest Mycology § (Botany 25) | 2 | |

* Given in the Engineering College.

† Given in the College of Arts and Sciences.

‡ Agronomy 7 or 9 or both are recommended. Also American History 10.

§ Given in alternate years beginning 1913-1914.

## HOME ECONOMICS GROUP

| FIRST YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Home Economics 1, 2 (Sewing and Design) | 3 | 3 |
| Rhetoric 1, 2 (A and S)* | 2 | 2 |
| Chemistry 1, 2 (A and S)* | 2 | 2 |
| Language, Ancient or Modern (A and S)* | 5 | 5 |
| Botany 1 and Zoology A (A and S)* | 3 | 3 |
| Physical Training | 1 | 1 |
| | 16 | 16 |

FIRST YEAR FOR STUDENTS WHO HAVE NO ENTRANCE CREDIT IN CHEMISTRY

| | | |
|---|---|---|
| Home Economics 1, 2 (Sewing and Design) | 3 | 3 |
| Rhetoric 1, 2 (A and S)* | 2 | 2 |
| Physical Training | 1 | 1 |
| Chemistry D*a* (A and S)* | 3 | |
| Zoology A | | 3 |
| Language (Ancient or Modern) (A and S)* | 5 | 5 |
| | 14 | 14 |
| SECOND YEAR | | |
| Home Economics 3, 4 (Foods: Selection and Preparation) | 3 | 3 |
| Chemistry 3*a* (Organic) (A and S)* | 4 | |
| Chemistry 14 (Food and Sanitary) (A and S)* | | 5 |
| Physiology 1, 2 (A and S)* | 2 | 2 |
| English Literature 1, 2 (A and S)* | 3 | 3 |
| Physical Training | 1 | 1 |
| Physical Education 9 (Emergencies—First Aid) | 1 | |
| Entomology 10 or Elective Subject | 2 | |
| | 16 | 14 |
| THIRD YEAR | | |
| Home Economics 5, 6 (Advanced Food Study and Dietetics) | 3 | 3 |
| Home Economics 7, 8 (Industrial Art) | 3 | 3 |
| Bacteriology 2*a* (A and S)* | | 2 |
| † Philosophy, Sociology, or Political Economy (A and S)* | 3 | 3 |
| Electives | 7 | 5 |
| | 16 | 16 |

* See third note at bottom of page 22; (E) refers to the College of Engineering.

† Philosophy 1 and 2 required of candidates for teachers' certificate. See page 20.

| FOURTH YEAR | 1st Semester Hours | 2d Semester Hours |
|---|---|---|
| Home Economics 9, 10 (Household Administration) | 3 | 3 |
| Education 4 (Child Study) (A and S)* | 3 | |
| Fine Arts 1 (A and S)* | 2 | |
| History | 3 | 3 |
| Electives | 5 | 9 |
| | 16 | 15 |

* See third note at bottom of page 22.

## COURSES OF INSTRUCTION

Students are advised to consult the heads of departments before registering.

For additional courses that may be chosen to apply as "Electives" see "Courses of Instruction" of the College of Arts and Sciences, the College of Engineering, and the Teachers College.

Courses included between brackets are not given in 1912-1913.

## AGRICULTURAL BOTANY

Head Professor Wilcox, Adjunct Professor Link, Assistant Moseley, Assistant Vasey

### GENERAL INFORMATION

The offices, laboratories and lecture room are located in Plant Industry Hall. For use in the instructional work the department has a very extensive collection of lantern slides, charts, and other illustrative material. An extensive pathological herbarium and collection of economic plants are being developed as rapidly as possible. The large private library of the head professor of Agricultural Botany, particularly complete in phytopathology, is available for the use of advanced students. A greenhouse has recently been arranged and specially equipped for experimental work in physiology and pathology.

A limited number of advanced students with proper training can be offered exceptional opportunities for research work in phytopathology. In some cases it is possible for such students to receive compensation for work done in connection with problems being investigated by the department.

### GRADUATE WORK

The department is especially prepared to offer graduate work in phytopathology and phytophysiology. To successfully undertake research work in these subjects students should have a broad training in botany, chemistry, and zoology; should be able to read French and German and should have taken at least six hours of work in this department. Before registering students should consult the head of the department.

FOR UNDERGRADUATES AND GRADUATES

1. **Elementary Plant Pathology**—A broad survey of the development and present condition of our knowledge of plant disease. Special attention will be given to diseases having their origin in malnutrition and unfavorable chemical and physical factors. The most typical and important diseases of our leading cultivated plants will be described in some detail. The laboratory work will acquaint the student with the current technique, including the preparation and use of culture media, the establishment of pure cultures and artificial inoculation. Three hours lecture. Six hours laboratory. Three hours credit. Students are advised to take Agricultural Botany 7 and 8 before or with this course. Wilcox

2. **Elementary Plant Pathology**—1 continued. Second semester.

3. **General Plant Pathology**—Prerequisite: Agricultural Botany 1, 2. An advanced course of lectures designed to furnish such a broad working basis as to enable one to engage in original reseach in plant pathology. The following are some of the subjects to be discussed: The physiology and cytology of resistance and immunity, origin of parasitism, specialization, epidemics and climatic factors, etc. Two hours lecture. Four hours reading. Two hours credit. First semester. Wilcox

4. **General Plant Pathology**—3 continued. Second semester.

5. **Economic Botany**—The general principles of morphology and phylogeny are first developed as a basis for a survey of the classification, distribution, origin, and products of the economic plants of the world. Special attention is devoted to the weeds, forage plants and seed testing. Three hours lecture. Four hours laboratory. Three hours credit. First semester. Wilcox

6. **Economic Botany**—5 continued. Second semester.

7. **Plant Physiology**—A course of selected experiments supplemented by lectures, conferences and readings designed to acquaint the student with plant chemics, plant physics and the phenomena of growth and movement. Three hours lecture. Six hours laboratory. Three hours credit. First semester. Link

8. **Plant Physiology**—7 continued. Second semester.

9. **Pathological Anatomy**—A thoro study of the structures and activities of the plant cell in pathological tissues. A comprehensive study of the morphogenic influence of various unfavorable factors. Two hours lecture. Four hours laboratory. Two hours credit. First semester. Wilcox

10. **Pathological Anatomy**—9 continued. Second semester.

11. **Special Morphology of the Fungi**—The morphology, phylogeny, physiology and life history of the principal groups of the fungi. Three hours lecture. Four hours laboratory. Three hours credit. First semester.

Wilcox

12. **Special Morphology of the Fungi**—11 continued. Second semester.

AGRICULTURAL HIGH SCHOOL COURSES

A. **Elementary Agricultural Botany**—This course offers a general introduction to the science of botany. The students will become acquainted with the general morphology of the flowering plants. This will be accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. Three hours lecture. Two hours laboratory. First semester.

B. **Elementary Agricultural Botany**—Elementary study of types of plants selected as far as possible with reference to their economic value in agriculture. Three hours lecture. Two hours laboratory. Second semester.

C. **Elementary Plant Physiology**—An elementary study of the growth, nutrition, irritability and reproduction of plants with special reference to the application of these facts to plant culture. Two hours lecture. Two hours laboratory. First semester.

D. **Elementary Plant Pathology**—An elementary study of the more common diseases of cultivated plants; the best methods of controlling these by spraying, proper methods of cultivation, use of resistant varieties, etc., will be discussed. Two hours lecture. Two hours laboratory. Second semester.

## GENERAL BOTANY

Head Professor Bessey, Associate Professor Pool, Adjunct Professor Walker

1. **General Botany**—Introduction to structure of plants (cells, tissues, tissue systems). General morphology, physiology, and classification of representative species, including blue-green and green algæ. Three hours lecture. Six hours laboratory. Three hours credit. First semester.

Bessey, Walker

2. **General Botany**—The general morphology, physiology and classification of representative species of brown algæ to flowering plants. Three hours lecture. Six hours laboratory. Three hours credit. Second semester.

Bessey, Walker

13. **Flowering Plants**—Principles of the classification of Monocotyledons and their particular application to the grasses. Two hours lecture. Four to twenty hours laboratory work in the field and herbarium. Two to six hours credit. First semester. Bessey, Pool

14. **Flowering Plants**—Principles of the classification of Dicotyledons and their particular application to the Composites. Otherwise as in course 13. Second semester. Bessey, Pool

15. **Mycology**—A study of the fungi and of Mycological literature; classification; physiology, life history, parasitism, symbiosis, heteroecism, mycorhiza, laboratory and field work. Three lectures, eight hours laboratory. Three hours credit. First semester. Pool, Walker

16. **Mycology**—The role of fungi and bacteria in the production of plant diseases, bacterial diseases, epidemics, physical and climatic factors, pathological technique. Three lectures, eight hours laboratory. Three hours credit. Second semester. Pool, Walker

19. **Plant Physiology**—An introductory study of the processes and functions of plants. Including imbibition; osmosis, absorption; the relation of the soil and of solutes to the plant; the movement of substances in the plant body; transpiration; guttation; bleeding; maintenance and bodily form; turgor, secretion, waste products. Three hours attendance. Six hours laboratory. Three hours credit. First semester. Pool

20. **Plant Physiology**—Photosynthesis; the question of the manufacture and assimilation of food; stomatal relations; the nitrogen cycle; the storage and digestion of foods; respiration and fermentation; growth and movement with special reference to the influence of external factors upon these phenomena; irritability; stimulus and response; correlation; reproduction of plants; death. Three hours attendance. Six hours laboratory. Three hours credit. Second semester. Pool

21. **Plant Ecology**—The relation of plants to their environment; adaptation; alternation and zonation; factors of the habitat; use of ecological instruments. Two lectures, six hours laboratory. Two hours credit. First semester. Pool

22. **Plant Ecology**—Mostly field work, with detailed studies and accurate observations. Two lectures, six hours laboratory or field work. Two hours credit. Second semester. Pool

25. **Forest Mycology**—A study of the fungi which attack forest trees: the role of fungi in the decay of timber. Two lectures, six hours laboratory or field work. Two hours credit. First semester. Pool

## AGRICULTURAL CHEMISTRY

Head Professor Alway. Adjunct Professor Trumbull. Mr. Blish

All courses in the department are given in Experiment Station Hall.

The work offered by the Department of Agricultural Chemistry is either research or direct preparation for research. In general only graduates, or undergraduates in their senior year, are prepared for this work, which is largely individual and the nature of which depends largely upon the student's previous work in chemistry, geology, physics and soils.

### UNDERGRADUATE WORK

Courses 2, 4, 5, 6, and 8 are open to undergraduates who previously have had sufficient training. On account of the varied nature of the problems presenting themselves in agricultural chemistry students are urged to acquire as thorough a training as possible in inorganic, organic, analytical, and physical chemistry before specializing in this department. Only those whose training in pure chemistry has been thorough may hope to succeed in dealing with problems in agricultural chemistry.

### GRADUATE WORK

Courses 2, 4, 5, 6, and 8 outlined below are primarily for graduates. In addition to these courses, graduate students may select problems in the chemistry of plants. The nature of the problem assigned to any particular student depends both upon his previous training and upon the lines of investigation in progress at the Experiment Station.

### FOR UNDERGRADUATES AND GRADUATES

2. **Analysis of Agricultural Products**—A course in the quantitative analysis of grain, flour, fruit, dairy products and fodders. Prerequisite: Courses 1, 2, 3, 7, and 8 in Chemistry or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester.

Alway

4. **Analysis of Soils and Fertilizers**—A course in the quantitative chemical analysis of soils and fertilizers. Prerequisite: Courses 1, 2, 3, 7, and 8 in Chemistry, or their equivalent. One hour attendance. Five hours laboratory. Two hours credit. Second semester. Alway

5. **Research in the Chemistry and Physics of Soils**—The investigation in the field, in the laboratory, or in both, of some problem in soil chemistry or soil physics. Prerequisite for undergraduates: Courses 7, 8, 9, and 10 in Agronomy. Two to five hours credit. First semester.

Alway

6. **Research in the Chemistry and Physics of Soils**—5 continued. Second semester.

8. **Chemical and Physical Properties of Soils**—An advanced course on the chemical composition and physical properties of soils. This course is open to only those who have already taken courses 5 or 6 or who are taking course 6. Three hours credit. Second semester. Alway

AGRICULTURAL HIGH SCHOOL COURSES

A. **Elementary Agricultural Chemistry**—General principles of chemistry. Special emphasis upon chemistry of agriculture. Three hours lecture. Four hours laboratory. First semester. Trumbull

B. **Elementary Agricultural Chemistry**—A continued. Second semester.

D. **Preparatory Chemistry**—For students who have had A and B and are preparing to enter the University. Two hours attendance. Four hours laboratory.

## CHEMISTRY

Professor Dales, Assistant Professor Borrowman, Adjunct Professor Fossler, Mr. Wilson, Miss ———

D. **The Non-Metallic Elements**—Including the general principles of chemistry. The course is designed especially for those whose program of studies does not permit them to carry courses A and B before registering for course 1. Such students will attend the same lectures as are given in course A and in addition one hour quiz at a time to be arranged. Three hours lecture. One hour quiz. Seven hours laboratory. Four hours credit. First semester.

May be taken as course D*a* with four hours laboratory work instead of seven for three hours credit instead of four, by Home Economics students only. Dales, Wilson, ———

1. **Qualitative Analysis**—Elementary course required of technical and scientific students. Prerequisites: A and B, D (or D*a* for Home Economics students only) or two credit points. Two hours attendance. Four hours laboratory. Two hours credit. First semester.

Borrowman, Wilson, ———

2. **Qualitative Analysis**—1 continued. An introduction to quantitative analysis is included. Elementary course required of technical and scientific students. Prerequisite: Course 1. Two hours attendance. Four hours laboratory. Two hours credit. Second semester.

Borrowman, Wilson, ———

3. **General Organic Chemistry**—The important classes of organic compounds of the laiphatic and benzene series. Derivatives. Preparation of typical compounds. Prerequisite: Courses 1 and 2. Five hours attendance. Eight hours laboratory. Five hours credit. First semester.

May be taken as course 3*a* with four hours laboratory work instead of five, by Home Economics and College of Agriculture students only.

Fossler

14. **Food and Sanitary Chemistry**—Chemical processes of nutrition; evaluation of foods, preservatives, cleansing agents, etc., with a practical laboratory course in food and water analysis including analysis of flour, milk, oils, etc., also the detection of adulterants and impurities. Prerequisite: Courses 1, 2, and 3 or 3*a*. Five hours lecture with demonstra tions. Eight hours laboratory. Five hours credit. Second semester.

Fossler

## AGRICULTURAL EDUCATION

Professor Bradford

1. **Agricultural Pedagogy**—The educational value of industrial, and especially agricultural training; industrial training as applied to Nebraska and Nebraska problems; the part which the schools, rural and town, should take in education for rural life; courses of study and material for agricultural instruction in both rural and high schools; study of the preparation of the teachers of this work. Junior or senior year. First semester. Two hours attendance. Two hours credit. Bradford

## AGRICULTURAL ENGINEERING

Head Professor Chase, Adjunct Professor Seaton, Adjunct Professor Baer, Mr. Wood, Mr. Moore

FOR UNDERGRADUATES

1. **Farm Machinery**—The practical study of all lines of agricultural implements, tillage, grading, seeding, harvesting, threshing and fertilizing machinery. One hour attendance. Two hours preparation. Four hours laboratory. Two hours credit. First semester. Chase, Seaton

2. **Farm Motors**—The practical study of farm motors, the horse, windmill, steam boilers, steam engines, traction engines, gasoline engines, electric motors. One hour attendance. Two hours preparation. Four hours laboratory. Two hours credit. Second semester. Chase, Seaton

9. **Carpentry**—Practice with the care, use and adjustment of tools, exercises in bench work, farm equipment and farm building construc-

tion. Lectures on the cutting, selecting, milling and durability of timbers. One hour attendance. Eight hours laboratory. Three hours credit. Baer

10. **Forge Work**—Practice in forging, welding, tempering, pipe fitting, babbitting, chipping and repairing of farm machinery. Lectures on metallurgy of iron and steel, on wheelwright and shoeing. One hour lecture. Eight hours laboratory. Three hours credit. Moore

FOR UNDERGRADUATES AND GRADUATES

3. **Rural Architecture**—The laying out of farms, the study of houses, barns, granaries, sheds, fences, equipment, etc. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. First semester. Chase, Wood

4. **Farm Drainage and Rural Highways**—A study of methods of drainage, estimates, laying out drainage systems, etc. A study of the highways of Nebraska, construction and reconstruction, haulage, and highway laws. The first half of the time of this course is given to drainage, and the second to highways. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. Second semester. Wood

5. **Wood Work and Interior Finishing**—Practice at the bench with light carpenter tools and the care of edged tools for the home. Work in the construction of furniture, painting, oiling, and finishing the same. Instruction in the planning of the home, the designing, selecting and care of the interior finish. One hour attendance. Two hours practice. One hour credit. For women only. First semester. Baer

6. **Spraying Machinery**—The designing of spraying outfits, practice with the gasoline engine, mixers and pumps and a study of nozzles. Three hours laboratory. One hour credit. First semester. Chase

13. **Automobiles, Theory and Practice**—A study of automobiles and motor truck engines, ignition systems, carburetors, transmissions, differential, and the care and use of the automobile. Two hours recitation. Four hours preparation. Three hours laboratory. Three hours credit. First semester. Seaton

18. **Wood Work and Interior Finishing**—Continuation of course 5 but with hard woods. Prerequisite: Course 5. One hour attendance. Two hours practice. One hour credit. (For women only.) Second semester. Baer

AGRICULTURAL HIGH SCHOOL COURSES

A. **Wood Work**—Practice with the care, use and adjustment of tools. Exercise in bench work. One hour attendance. Three hours laboratory. First semester. Baer

B. **Wood Work**—Farm building construction. Prerequisite: Course A. One hour attendance. Three hours laboratory. Second semester. Baer

C. **Forge Work**—Practice in forging, welding, tempering, pipe fitting, babbitting, and repairing of machinery. One hour attendance. Three hours laboratory. First semester. Moore

D. **Forge Work**—Continuation of course C. Prerequisite: Course C. One hour attendance. Three hours laboratory. Second semester. Moore

E. **Farm Machinery**—A study of all lines of agricultural implements, tillage, grading, seeding, harvesting, pumping, and fertilizing machinery. One hour attendance. Three hours laboratory. Chase, Seaton

F. **Farm Motors**—Continuation of course E with the addition of work with windmills, steam boilers, steam engines, gasoline engines, and traction engines. The determination of brake horse power and other tests in farm motors. One hour attendance. Three hours laboratory. Chase, Seaton

G. **Rural Architecture**—The laying out of farms, the study of houses, barns, granaries, sheds, fences, equipment, water systems, sewerage, heating, etc. Practice at drawing and designing. One hour attendance. Two hours designing. Wood

H. **Rural Architecture**—Continuation of course G. One hour attendance. Two hours designing. Wood

I. **Wood Work and Finishing** (For women only)—Practice with use, care, and adjustment of tools. Interior construction. Painting, oiling, and staining of woods. One hour attendance. Two hours practice. First semester. Baer

J. **Wood Work and Finishing** (For women only)—Continuation of course I. One hour attendance. Two hours practice. Second semester. Baer

## INSTRUCTIONAL AGRONOMY

Professor Barker, Assistant Professor Hopt, Mr. Young

Students should have at least one year's work in Botany, Chemistry and Geography. Courses are offered to meet the needs of (1) those students taking general culture courses, or interested in farm operations or the management of land; (2) those fitting themselves to be agricultural teachers or investigators.

Excellent opportunities are offered for graduate students who desire to take up research work. Training in natural and physical sciences is necessary for students taking graduate work. Lines of research work are open to students of this class upon consultation with the head of the department.

1. **Forage Crops Management**—An elementary course in the management of common and important forage crops. Classification, distribution and adaptability of common forage plants. Methods by which good seed may be secured. Seeding, care, harvesting and best use of forage crops, including those used for pasture, studied in considerable detail. Special attention given to identification. Two hours attendance. Four hours laboratory. Three hours preparation. Three hours credit. First semester.
Hopt

2*a*. **Cereal Crops**—Classification and methods of improvement of cereal crops, their adaptability and distribution, time and methods of seeding, harvesting, and cultivating. To be taken in connection with course 2*b*. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

2*b*. **Grading and Judging Grains**—Laboratory practice in describing, scoring, judging and inspecting cereals by outlines and score cards. Methods of breeding to improve these cereals. To be taken in connection with course 2*a*. Four hours laboratory. Two hours preparation. Two hours credit. Second semester. Hopt and Assistants

3. **Forage Crop References**—Assigned forage crop readings. A thorough study of Hunt's "Forage and Fiber Crops in America," also of various assigned readings in bulletins and other texts. These text studies and readings are essentially those required as supplementary work in Agronomy 1. Open only to Agricultural High School students who have completed courses A, B, C, and D and those whose record in the department are entirely satisfactory. One hour attendance. Two hours preparation. One hour credit. First semester. Hopt

4. **Cereal Crop References**—Hunt's "Cereals in America," readings as required in Agronomy 2*a* and 2*b*. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

5. **Advanced Field Crops**—Grouping of all field crop plants in the order of their natural relationship. Origin, domestication, and evolution of field crop plants. Field crops in relation to food supply and human progress. History and evolution of field crops practice. Contemporaneous farming in the various sections of the United States. Special and minor crops in Nebraska. Special phases of field crops practice. Field crop enemies. Problems and methods in field crop teaching, breeding and experimentation. Lectures, reading and consultations. Prerequisites: Courses 1, 2*a*, 2*b* and 7. Two hours attendance. One to thirteen hours preparation. One to five hours credit. First semester. Hopt

6. **Advanced Field Crops**—5 continued. Second semester.

7. **Soils**—This is an elementary and general course. It comprises a study of the origin, formation, classification, characteristics and properties of soils; the relation of soils to plant growth and crop production; the principles of soil management. Two hours lecture. Four hours laboratory. Four hours credit. First semester. Barker, Young and Assistants

8. **Soils**—7 continued. Second semester.

11. **Soil Management**—Principles governing the management of land, crop system, tillage, rotations, manuring, fertilizing, drainage and aeration. Prerequisite: Courses 1, 2*a* and 7. Two hours attendance. Four hours preparation. Two hours credit. First semester. Barker

11*a*. **Soil Management Laboratory**—Given in connection with 11. Treating of principles governing the management of land from the practical standpoint. Four hours attendance. Two hours preparation. Two hours credit. First semester. Barker

12. **Soils of the United States**—A brief study of each of the fourteen soil Provinces as surveyed by the Bureau of Soils. The characteristics of the various soil types of the United States as to plant production will be considered. The soils of the corn belt and Nebraska soils are especially emphasized. Prerequisites: Courses 7 and 8. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Barker

13. **Advanced Soils**—Factors influencing the productive capacity of lands. Lectures, readings, and laboratory. Credit according to work. To be arranged with head of department. Prerequisite: Courses 1, 2*a*, 7 and 8. First semester. Barker

14. **Advanced Soils**—13 continued. Second semester.

17. **Agricultural Examination of Soils**—A course designed to study soils in the field. Soil mapping and analysis; methods of determining their needs, their improvement and management. Prerequisites: Courses 1, 2, 7, 8, 13, 14. Four hours attendance. Two hours credit. First semester. Barker

19. **Agronomy**—Given during the Summer Session. A combined course in soils and field crops, especially prepared for those desiring to teach agriculture in secondary schools.

(*a*) Five lectures. Ten hours preparation. Two hours credit.

(*b*) It is recommended that the lecture course be accompanied by the laboratory course, which is given at the University Farm. Ten hours laboratory. Eight hours preparation. Two hours credit. Barker, Hopt

AGRICULTURAL HIGH SCHOOL COURSES

A. **Crop Management**—Adaptation, improvement, production and best use of the principal cereal and forage crops with special reference to Nebraska conditions. Three hours attendance. First semester. Hopt

B. **Crop Management**—A continued. Second semester.

C. **Crop Laboratory**—Must be taken with A. Identification of the plants, fruits and seeds of the more common field crops of Nebraska, including the important cereals, forage grasses and legumes. Judging and commercial grading of the cereals. Selection, care and testing which make for pure viable seed. Common field crop enemies and means of combating same. Four hours laboratory. First semester. Hopt and Assistants

D. **Crop Laboratory**—C continued. Must be taken with B. Second semester.

E. **Advanced Crop Laboratory Practice**—An optional course for students wishing to go further into field crop study than is possible in the more elementary courses A, B, C, and D. Of especial interest to men who wish to raise seed for others as well as for themselves, or who desire to grow new varieties or improved strains to meet peculiar local conditions. Two hours laboratory. First semester. Hopt

F. **Advanced Crop Laboratory Practice**—E continued. Second semester.

G. **Soil Tillage and Farm Management**—Origin, deposition and natural transportation of soils, physical and chemical constitution of soils and subsoils, size and structure of soil particles in relation to drainage, aeration, water storage and capillarity. Two hours attendance. First semester. Barker

H. **Soil Tillage and Farm Management**—G continued. Second semester.

I. **Soil Laboratory**—Must be taken with G. Formation of soils from rocks, study of texture and its influence on plant growth. Humus, soil moisture, movement of air, specific gravity and volume weight. Two hours laboratory. First semester. Barker, Young and Assistants

J. **Soil Laboratory**—I continued. Must be taken with H. Second semester.

K. **Principles of Soil Management**—Soil as a medium for crop growth, soil moisture, plant food, air and temperature of the soil; farm manures,

drainage, limeing alkali soils. Designed for those who wish to elect more soil work in the senior year than that accomplished in courses G, H, I and J. Two hours attendance. First semester. Barker

L. **Principles of Soil Management**—K continued. Second semester.

M. **Soil Laboratory**—Must be taken with K. More advanced work in soil physics. Designed for students who wish a more thorough knowledge of soils than that gained in the work of the Junior year. Two hours laboratory. One hour credit. First semester.

Barker, Young and Assistants

N. **Soil Laboratory**—M continued. Second semester.

## EXPERIMENTAL AGRONOMY

Professor Kiesselbach

Offered primarily to graduates who wish to specialize in Experimental Agronomy. Students taking these courses must have completed all general courses in Agronomy and Farm Management and must spend the summer assisting in experimental work.

1. **Investigation**—Satisfactory work on some special line of investigation with assigned readings. Six to twenty hours laboratory. Thesis required. Two to five hours credit. First semester. Kiesselbach

2. **Investigation**—Continuation of 1. Second semester.

3. **Methods of Investigation**—Compilation of experimental data. Correlation tables. Statistical methods. Six to twenty hours laboratory. Two to five hours credit. Kiesselbach

4. **Methods of Investigation**—Continuation of 3. Second semester.

## ANIMAL HUSBANDRY

Professor Bliss, Assistant Professor Rail, Assistant Professor Lee, Mr. ———

PRIMARILY FOR UNDERGRADUATES

1. **Judging Live Stock**—Practice with the score card. Competitive judging of market types, by age, of cattle and swine. Four hours attendance. Two hours preparation, Craig's "Judging Live Stock." Two hours credit. First semester. Rail

2. **Judging Live Stock**—Practice with the score card and competitive judging of market classes of horses and sheep. Four hours attendance.

Two hours preparation, Craig's "Judging Live Stock." Two hours credit. Second semester. Rail

3. **Breeds of Live Stock**—History of different breeds of live stock. Methods of development of breeds. Characteristics and adaptability of improved breeds. Two hours attendance. Four hours preparation. Two hours credit. First semester. Lee, Rail

4. **Animal Nutrition**—Elementary live stock feeding. Methods of feeding all classes of farm animals. The compounding of rations. Three hours attendance. Six hours preparation. Three hours credit. Second semester. Bliss, Lee

5. **Animal Nutrition**—Advanced course. General composition of animal body. Composition and digestibility of foods. Digestion, absorption, and excretion. Influence of food on animal form and on qualities of meat and milk. Methods employed in conducting experiments in feeding. Two hours attendance. Four hours preparation. Two hours credit. First semester. Prerequisite: Course 4. Bliss, Lee

6. **Principles of Animal Breeding**—Theory and practice of animal breeding. Variation, correlation, heredity, prepotency, and selection. Grading, crossing, line breeding, inbreeding, and pedigrees. Three hours attendance. Six hours preparation. Three hours credit. Second semester. Prerequisite: Zoology 1 and 2. Rail

7. **Judging Live Stock**—Advanced course in judging, with especial attention given to the study of breed type. Two hours attendance. One hour preparation. One hour credit. First semester. Prerequisite: Courses 1 and 2. Bliss, Rail

8. **Judging Live Stock**—Continuation of 7 and should be preceded by it. Two hours attendance. One hour preparation. One hour credit. Second semester. Bliss, Rail

9. **Judging Live Stock**—Continuation of 7 and 8, with special attention given to comparison and judging of animals of different ages and also of group judging. Two hours attendance. One hour preparation. One hour credit. First semester. Bliss, Rail

10. **Animal Nutrition**—Seminar. Prerequisite: Courses 4 and 5. Two hours attendance. Two to four hours preparation. One or two hours credit. Second semester. Bliss, Lee

11. **Live Stock Management**—Care and management of the breeding herd. Two hours attendance. Four hours preparation. Two hours credit. First semester. Bliss, Rail

AGRICULTURAL HIGH SCHOOL COURSES

A. **Judging Live Stock**—Practice with the score card. Competitive judging of market types and classes, by ages, of cattle, sheep, and swine. Selecting animals for feeding purposes. Also judging meat carcasses. Four hours laboratory. First semester. Bliss, Lee, Rail

B. **Judging Live Stock**—Judging of breeds of horses, cattle, sheep, and swine by comparative methods. Special attention given to breed type and breed characteristics of animals. Four hours laboratory. Second semester. Bliss, Lee, Rail

D. **Breeds of Live Stock**—History of different breeds of live stock; methods of development of breeds; characteristics and adaptability of improved breeds. Four hours attendance. Second semester. Lee, Rail

F. **Feeding Animals**—Elementary live stock feeding; methods of feeding all classes of farm animals; the compounding of rations. Four hours attendance. Second semester. Bliss, Lee

H. **Judging Live Stock**—Advanced course for third year students. Prerequisite: Courses A and B. Four hours laboratory. Second semester. Bliss

I. **Principles of Animal Breeding**—Elective. An elementary study of fundamental principles of reproduction, heredity, variation, selection, and prepotency; also a consideration of practical problems in animal breeding. Two hours attendance. First semester. Rail

J. **Principles of Animal Breeding**—Continuation of I. Two hours attendance. Second semester. Rail

## ANIMAL PATHOLOGY

Professor Gain, Assistant Professor Sturdevant

2. **Diseases of Farm Animals**—Causes and prevention of animal diseases. Emergency treatment and minor surgery. Three hours attendance. Six hours preparation. Three hours credit. First semester. Gain

AGRICULTURAL HIGH SCHOOL COURSES

A. **Anatomy and Physiology**—Study of skeletons of horse and cow. Anatomy of digestive system and physiology of digestion. Circulatory system and study of blood. Two hours attendance. First semester. Sturdevant

B. **Anatomy and Physiology**—Respiration. The nervous system. The

senses. The foot. Generation and development. Two hours attendance. Second semester. Sturdevant

C. **Diseases of Farm Animals**—Hereditary diseases. Diseases of respiratory system. Prevention of digestive diseases. Minor emergency surgery. Prerequisite: Anatomy and Physiology A and B. Three hours attendance. First semester. Gain

D. **Diseases of Farm Animals**—Contagious diseases. Hygiene and Farm Sanitation. Three hours attendance. Three hours credit. Second semester. Gain

E. **Elements of Physiology**—Bones of skeleton. Digeston. The circulatory system. Respiration. The senses. Drugs and stimulants. Two hours attendance. First semester. Sturdevant

F. **Hygiene and Sanitation**—Personal hygiene. Domestic hygiene. Ventilation and water supply. Public hygiene. Two hours attendance. Second semester. Sturdevant

E and F. (Offered in the course for women in the Agricultural High School.)

## DAIRY HUSBANDRY

Head Professor Frandsen, Assistant Professor White, Mr. ———, Mr. Markham

1. **Milk Production**—This course covers the field of Dairy Husbandry in its relation to the producer. It consists of two lectures a week and one laboratory period devoted to judging of Dairy Cattle. The lectures cover matter relating to the leading breeds of dairy cattle, their chracteristics and adaptation for dairy purposes; the selection, breeding and building up of the dairy herd; selection of the dairy sire; calf raising; proper care of dairy cattle; the dairy barn; use of silo; a thorough study of the composition and relative food value of the leading dairy feeds and the feeding of dairy animals with special reference to economical milk production. Instruction in judging dairy cattle will consist of a study of the dairy type and characteristics of the various dairy breeds. Two hours attendance. Three hours laboratory. Three hours credit. First semester.

Frandsen, White

2. **Butter Making**—This course includes a general study of milk secretion; composition of dairy products, separation and acidity of milk. The preparation of starters, ripening of cream, churning, and the packing of butter. Two recitations and one laboratory period. Two hours attendance. Three hours laboratory. Three hours credit. Second semester.

Frandsen, Markham

3. **Milk Testing and Inspection**—This course consists of a study of Babcock's test for fat in milk and cream. It includes work with the various tests for moisture in butter, also a careful study of the methods for detecting preservatives and adulterations in dairy products, as well as the best methods of taking samples and of testing individual cows. This course also includes a careful study of the requirements necessary for the production of sanitary and certified milk. This course consists of one lecture and one laboratory period per week. One hour attendance. Three hours laboratory. Two hours credit. First semester. Frandsen, Markham

4. **Dairy Judging**—The object of this course is to enable the student to fix in his mind the types of cattle that are profitable producers of dairy products. The greater part of the work is done by comparative judging, using the Ayrshires, Guernseys, Holsteins and Jerseys of the College herd and those of nearby herds. Three hours laboratory. One hour credit. Second semester. White

5. **Advanced Dairy Judging**—A continuation of course 4. One hour preparation and two hours laboratory. One hour credit. First semester. Frandsen, White

6. **Ice Creams and Ices**—Elective in the Agricultural and Home Economics course. This course consists of a study of the manufacture of ice cream and ices. One hour lecture and one laboratory period. Two hours credit. Second semester. Frandsen

8. **Domestic Dairying**—This course is especially arranged for students of the Home Economics course. The object of this course is to give the student some practical as well as scientific knowledge concerning the care and preparation of dairy products for food purposes. The course includes lectures and laboratory work on the care of milk and cream; testing for fat, acidity, adulteration, preservatives and the general purity of milk and cream. Some work is also given in the manufacture of butter, cheese and ice creams. One hour attendance. Three hours laboratory. Two hours credit. Second semester. Frandsen, ———

10. **Dairy Seminar**—Elective in the senior year of the agricultural course. This work consists of a study of the work accomplished by the various experiment stations, also review of the best foreign dairy literature. One hour attendance. One hour credit. Second semester. Frandsen

12. **Cheese Making**—A study of the importance of the quality and composition of milk in the manufacture of Cheddar Cheese; the principles involved in cutting, heating, milling, maturing, salting and pressing the

curd, curing and marketing; influence of organized and unorganized ferments in cheese; the construction and ventilation of cheese curing rooms. This course also includes lectures and laboratory work in the manufacture and marketing of Brick, Cream and Cottage Cheese. One recitation and three-hour laboratory period. Two hours credit. Second semester.

Frandsen, Markham

AGRICULTURAL HIGH SCHOOL COURSES

A. **Milk Production**—The object of this course is to give practical instruction regarding the dairy cow on the farm, including adaptation of breeds, selection of breeds for various purposes, selection of individual cows by type and by butter fat records; general care and management. The Ayrshires, Holsteins, Guernseys and Jerseys of the College herd are used in demonstrating work in this course. Two lectures and four hours laboratory. First semester. Frandsen, White, Liebers

C. **Farm Dairying**—Includes lectures on milk secretion; composition of dairy products, separation and acidity of milk. The preparation of starters and ripening of cream, churning and packing of butter. Two lectures and two hours laboratory. First semester.

Frandsen, White, Markham

D. **Milk Testing and Inspection**—This course includes practical work with Babcock's test of milk and cream. It also includes some work in testing for moisture in butter. This course also includes a careful study of the requirements necessary for the production of sanitary and certified milk. Two lectures and two hours laboratory. Second semester.

Frandsen, White

## ENTOMOLOGY

Head Professor Bruner, Associate Professor Swenk, Mr. Dawson

Courses 1 and 2 are open to all students, and they, or their equivalent, must precede all other courses in entomology except 3, 4, 7, 8, 9 and 10.

PRIMARILY FOR UNDERGRADUATES

1. **General Entomology**—A general survey of the class Insecta, with introductory lectures on arthropod structure, physiology, transformations, distribution and behavior, followed by a consideration of the characteristics of the orders, suborders and principal families of insects, and the life-histories and habits of typical species. Laboratory dissections of typical forms of the various orders, correlated with the lectures. Three

hours attendance. Six hours laboratory and preparation. Three hours credit. First semester. Bruner, Dawson

2. **General Entomology**—1 continued. In addition, general work in the collection and classification of insects, and the study of microscopical forms. Three hours attendance. Six hours laboratory and preparation. Three hours credit. Second semester.

3. **Economic Entomology**—An introduction to the practical phases of entomology, presenting the broad principles of insect damage and control. Types of insect injury; beneficial insects; parasitism; gall formation; fungous and bacterial diseases of insects; climatic influence on insect control; cultural preventives and artificial remedies in fighting insect pests. Assigned readings and laboratory work in rearing insects and following out life-histories in the insectary, designed principally to give the student a general view of insect metamorphosis and of insectary methods and the use of apparatus. Three hours attendance. Six hours laboratory and preparation. Three hours credit. First semester. Bruner

4. **Economic Entomology**—Detailed studies of our most conspicuous insect pests concerning their life-histories and habits, and preventives and remedies for them, and in the spring observations of their work in the field. Does not presuppose course 3, although it is recommended that students elect that course immediately preceding this one. Three hours attendance. Six hours laboratory, preparation and field work. Three hours credit. Second semester.

FOR GRADUATES AND UNDERGRADUATES

5. **Systematic Entomology**—A study of the principles and machinery of classification as applied to insects. Taxonomic groups; evaluation of characters; evolution of organs; dimorphism; nomenclature codes; synonymy; types; methods of description; construction of tables; use of reference books; faunal areas; ecological methods. Laboratory work with various insect groups designed to give a conception of the varying value of classificatory characters. Two hours attendance. Seven or more hours laboratory. Three or more hours credit. First semester. Swenk

6. **Systematic Entomology**—5 continued. In addition, a detailed study of entomological technique involving the methods of collecting, preparing and preserving entomological specimens for the cabinet and museum; entomotaxy; use of entomological apparatus; entomography; entomological literature and methods of publication; bibliography, index and catalog

compilation. Two hours attendance. Seven or more hours laboratory and field work. Three or more hours credit. Second semester.

7. **Agricultural Entomology**—A review of the principal insects injurious to corn, the small grains, alfalfa and clover, grasses, the potato, sugar beets, and garden vegetables. Assigned readings and laboratory work in life-histories and actual field work in investigating insect pests. Two hours attendance. Seven or more hours preparation. Three or more hours credit. First semester. Swenk

8. **Agricultural Entomology**—7 continued. In addition, a consideration of the principal insect enemies of the apple, stone fruits, grape and bush fruits, and of domestic animals and stored vegetable and animal products, the preparation and use of insecticides and methods of spraying and fumigation. Two hours attendance. Seven or more hours preparation. Three or more hours credit. Second semester.

9. **Apiculture**—A general survey of the subject, including a discussion of the structure, life-history, varieties and communal life of the honey bee; methods of handling bees, formation of colonies, enlarging brood nests, controlling the colony growth, rearing of queens, honey and wax production, honey-producing plants, apiary paraphernalia and the symptoms, etiology and control of bee diseases and other enemies of bees. Three hours directed laboratory and reading. One hour credit. First and second semesters. Bruner

10. **Domestic Entomology**—A series of lectures on insect life, emphasizing especially the insects affecting the household, with suggestions for their control. House ants, cockroaches, termites, silver fish, clothes moths, carpet beetles, skippers, flour beetles and meal worms, lice, fleas, house flies, mosquitoes, etc. Two hours attendance. Four hours preparation and reading. Two hours credit. First semester. Swenk

11. **Forest Entomology**—Lectures and laboratory studies of the insects of the forest. Two hours attendance. Seven hours laboratory. Three hours credit. Second semester. Bruner

12. **Historical Entomology**—An outline of the history of entomology, particularly the development of economic entomology from the earliest efforts down to the work of Riley and the advent of the new school of entomologists. One hour attendance. Two hours assigned readings. One hour credit. Second semester. Swenk

13. **Medical Entomology**—A study of insects in their relation to the

transmission of certain human and animal diseases and of their capacity as human parasites. One hour attendance. Two or more hours laboratory. One or more hours credit. Second semester. Bruner

14. **Seminary**—The seminary work of the department is carried on by the Nebraska Entomological Society, an association of students specializing in entomology and taking advanced or graduate courses, meeting one evening each month for the presentation of papers and the discussion of current progress in entomological science. Time spent in the preparation of papers and attending meetings may be applied as laboratory work.

15. **Research in Systematic Entomology**—Independent studies under the advice of the head of the department leading to the monographing of some genus, subfamily or family of insects or the detailed study of the insect fauna of Nebraska in one of the larger groups. First semester. Bruner

16. **Research in Systematic Entomology**—15 continued. Second semester.

17. **Research in Economic Entomology**—Individual investigation of some special problem in economic entomology, usually the monographing of a species or group of species of economic importance. First semester. Bruner

18. **Research in Economic Entomology**—17 continued. Second semester.

AGRICULTURAL HIGH SCHOOL COURSES

A. **Farm Entomology**—Insects in their relation to Agriculture. For men. Two hours lecture. Two hours laboratory. First semester Swenk

B. **Farm Entomology**—Course A continued, taking up the principal insect pests of our crops. Two hours lecture. Two hours laboratory. Second semester.

C. **Home Economics Entomology**—Insects in their relation to the household. For women. Two hours lecture. Two hours laboratory. First semester. Swenk

D. **Home Economics Entomology**—Course C continued. Second semester.

E. **Farm Entomology**—An abridgment of courses A and B for students in the winter course. Sixteen lectures. Bruner, Swenk

## FARM MANAGEMENT

Head Professor Pugsley, Assistant Professor Filley

FOR UNDERGRADUATES AND GRADUATES

3. **Farm Management**—Dealing with farm problems, such as farm location, capital, operating expenses, equipment, cost of production, systems of land tenure, size of farms, crop rotations, labor and marketing. Should be preceded or accompanied by Agronomy 1, 2*a*, 7 and 9. Three hours attendance. Six hours preparation. Three hours credit. First semester. Filley

4. **Farm Management Seminar**—Prerequisite: Course 3. This course deals with problems in farm management and is a continuation of course 3. Special lines of investigation relating to farm management are taken up by the students. Three to fifteen hours meeting, preparation and library. One to five hours credit. Second semester. Pugsley, Filley

5. **Advanced Farm Management**—Prerequisite: Courses 3 and 4. A part of the work must be done in the field and may be done during vacation. It is designed to train the students for field work, and to give them a first hand knowledge of Nebraska farm conditions. It will involve a detailed study of the application of economic and scientific principles to the business management of the individual farm, taking an inventory and farm census, mapping out fields, comparison of various farms as to methods of management, or the student may work out a specific problem. Primarily for graduate students. Admission by consent of the instructor. Three to fifteen hours meeting, field work, tabulating of data and library. One to five hours credit. First semester. Pugsley, Filley

6. **Advanced Farm Management**—5 continued. Second semester.

17. **Farm Documents**—A course dealing with legal papers with which the farmer should have a working knowledge, such as deeds, mortgages, leases, negotiable instruments, etc. Some time will be devoted to those phases of rural law bearing most directly upon farm management problems. Two hours attendance. Four hours preparation. Two hours credit. First semester. Filley

18. **Farm Accounting**—Continuation of 17. A course dealing with the importance of keeping farm accounts, in which a simple and practical system will be discussed. The subject matter and the arrangement of the farmers' library will receive some attention. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Filley

AGRICULTURAL HIGH SCHOOL COURSES

A. **Farm Management**—This course is a study of the principles underlying farm management. It covers such problems as capital, farm organization, distribution of labor, establishing rotations, cooperation and marketing. Three hours attendance. First semester. Filley

B. **Farm Documents and Farm Accounts**—This is a continuation of course A, and deals largely with legal papers and farm accounting. Legal papers with which every farmer should have a working knowledge, such as deeds, mortgages, leases and negotiable instruments, receive consideration. Students are given practice work with a system of accounts which is practical for farm conditions. Three hours attendance. Second semester. Filley

## FORESTRY

Professor Morrill, *Adjunct Professor Duppert

Course 1 is open to all students. Before electing other courses students should confer with the head of the department. Courses 5, 7, 8, 11, 12 and 15 may be taken by students in other departments; in addition to these courses 23, 24 may be taken as minors by graduates who are candidates for advanced degrees in other departments. Advanced students desiring to elect Forestry Problems (Forestry 23, 24), or to pursue investigations along other forestry lines, may arrange the number of credit hours by consulting with the head of the department; no more than four credit hours will be allowed for this work in any one subject in one semester.

Course 17*a* is given by a state forester if feasible, otherwise by one of the forestry faculty. Courses 12*a* and 12*b* are given by Mr. William H. Mast. Through the courtesy of the United States Forest Service, the University is frequently able to announce special lectures on various forestry problems. Lumbermen and City Foresters are occasionally engaged for a few lectures. Special instruction is given in emergency surgery; and discussion and demonstration of camp equipment, camp cooking, and of packing on horses is offered. A special course is given in rhetoric designed to give the forestry student preparation for the writing of scientific reports on forestry subjects, the articles being corrected for English and structure in the Rhetoric Department and for Scientific accuracy in the Forest Department. A virile well attended Forest Club is engaged in the study of various forestry topics and publishes annually a creditable forestry magazine.

* Resigned.

A degree of Master of Forestry is given upon satisfactory completion of the courses scheduled for the fifth year. This presupposes a major in Forestry and a minor in Botany. If a minor in Entomology, in Engineering or in other departments is desired, the student should confer with the heads of both departments. In addition, one year's practical field experience in forestry will be required before granting the Master's degree. This may be accomplished by vacation work or by a year's continuous work. Such experience is essential to proper training of the student and should be as diversified as possible.

1. **General Forestry**—Treatment of forestry in a popular manner to give the general student a brief survey of forests and forestry in the United States and in foreign countries; relation of forestry to agriculture and to other industries. One hour attendance. Two hours preparation. One hour credit. First semester. Duppert

2. **General Forestry**—Forestry in the United States in greater detail for students specializing in the subject. The elements of many forestry subjects are covered and the foundations are laid for more exhaustive development in succeeding courses. One hour attendance. Two hours preparation. One hour credit. Second semester. Duppert

3. **Dendrology**—Identification and classification of the chief coniferous trees of the United States; their distribution, economic importance, silvical requirements. By lectures supplemented by lantern slides the characteristics of these trees in forest types are shown. Emphasis is placed upon practical methods for identifying the trees in the field. Two hours attendance. Four hours laboratory and field work. Two hours credit. First semester. Morrill

4. **Dendrology**—A continuation of course 3 but pertaining to the chief broad leaf trees of the United States; their identification in the winter as well as in the summer. Three hours attendance. Six hours laboratory and field work. Three hours credit. Second semester. Morrill

5. **Study of Woods**—A study of the structure of the important woods leading to their identification. The laboratory is supplied with specimens of the leading commercial woods of the United States and some of the imported woods. The physical properties of these woods, such as hardness, color, odor, grain, texture, density, are studied in relation to identification and to their economic value. One hour attendance. One hour reading. Four hours laboratory. Two hours credit. First semester. Morrill

Applied Mechanics 20. **Timber Physics**—Primarily for forestry students. Prerequisite: Forestry 5. Physical and mechanical properties of wood; laboratory practice in ascertaining the properties of structural timber by bending, compression, shearing, torsion, impact, tension tests; relation of knots, moisture and structure of wood to strength. One hour attendance. One hour laboratory. Two hours credit. Second semester. Chatburn

Civil Engineering 30. **Forest Survey**—Designed for students of forestry. Prerequisite: Civil Engineering 5, 5*a*. Field and map work. Three hours credit. Second semester. Bridgman

7. **Forest Utilization**—Uses of timber; methods of logging and milling; the factors influencing the choice and use of logging methods; cost of lumbering in various forest regions; seasoning, grading, markets; a determination of stumpage values and the products of timber sales; secondary forest products; minor forest products. Two hours attendance. Four hours preparation. Two hours credit. First semester. Duppert

8. **Forest Utilization**—7 continued. Second semester.

11. **Silviculture**—Objects of silviculture; forest soils, temperature, moisture, light, wind and their relation to tree growth; forest influences on soil, climate, and stream flow; a study of the forest as a society of trees; silvical characteristics of stands; forest types; pure and mixed forests. Three hours attendance. Five hours laboratory and field work. One hour library work. Three hours credit. First semester. Duppert

12. **Silviculture**—11 continued. Methods of reproducing forests; forest nurseries, planting, sowing, thinning, harvesting; forest injuries and methods of preservation. Includes 12*a* and 12*b*. Same amount and distribution of time and same credit as in course 11. Duppert

12*a*. **National Forest Planting**—Methods of seed collecting, seed storage, nursery practice, and field planting. From six to eight lectures. Second semester. Mast

12*b*. **Commercial Nursery Practice**—Methods used in various parts of the United States; private forest plantations. From six to eight lectures. Second semester. Mast

14. **Forest Mensuration**—Construction of log rules and scaling. Methods of determining volume, age and increment of trees singly and of stands. Construction of volume tables, growth tables, yield tables following the gathering of data in the field. Practical application of this course

is made also in Forestry 20*a*. Three hours attendance. Six hours laboratory, library and field work. Three hours credit. Second semester.

Morrill

15. **Construction Engineering.** The construction of forest telephone lines, roads and trails, fire lines and lookout stations, cabins, barns, fences; designing bridges, trestles, culverts, flumes, trams, slides and splash dams; assigned reading preparatory to Railway Surveying (Civil Engineering 8). Two hours attendance. Four hours preparation. Assigned reading. Two hours credit.

17. **Forestry Policy**—State and Federal forest and land laws. State and national activity as to public and private holdings of timber lands; taxation timber owners' associations; state and private co-operation in fire protection. Includes 17*a*. One hour attendance. Two hours preparation. One hour credit. Morrill

17*a*. Special state forestry problems; management of state reserves. Ten lectures by a state forester. ———

19. **Forest Management and Valuation**—The relation of forest management to silviculture; forest rotation based upon various points of view; the normal forest; methods for accomplishing sustained yield. Valuation of forest soil and of forest growth. Forest organization and administration. Forest working plans. Three hours attendance. Six hours preparation. Three hours credit. First semester. Morrill

20. **Forest Management and Valuation**—19 continued. Second semester. Morrill

20*a*. About April 1 a field trip will be made to some extensive forest region where a tract of forest will be surveyed, the stands carefully estimated, growth studies made, logging and milling problems investigated and data for a forest working plan secured. About May 1 the class will return to the University and prepare the working plan and other reports.

21. **Thesis**—Subject for thesis is to be selected upon recommendation of the head of the department. Consultation hours to be arranged. Six hours preparation. Two hours credit. First semester. Morrill, Duppert

22. **Thesis**—21 continued. Second semester.

23. **Forestry Problems**—A definite problem will be assigned to each student. A written report is required upon completion of the work. Consultation hours to be arranged. Six to twelve hours laboratory. Two to four hours credit. First semester. Morrill, Duppert

24. **Forestry Problems**—23 continued. Second semester.

25. **Seminar**—Review of all the forestry courses preparatory to civil service examinations; and assigned reading.

26. **Seminar**—25 continued during first half of second semester.

28. **History of Forestry**—Twenty lectures and quizzes covering briefly the development of forestry practices in Europe and America and the discussion of economic conditions which lead to the adoption of forestry. One hour attendance. Two hours preparation. One hour credit.

30. **Grazing**—Twenty lectures, together with assigned reading, discussing range and live stock problems, Forest Service grazing and their identification and relative values, range reseeding; live stock diseases. One hour credit. Morrill

When feasible special lectures on the subject will be given by grazing experts of the Forest Service.

American History 10. **Land Laws and Policy of the United States**—Open to agricultural, engineering, forestry, and advanced academic students. Development of the successive "Wests" of American history, and the land policy accompanying each; general land policy of the present day; laws and policies in regard to agricultural, mineral, forest, and grazing lands. Three hours attendance. Three hours credit. Second semester.

Persinger

AGRICULTURAL HIGH SCHOOL COURSES

A. **Farm Forestry**—Relation of forestry to agriculture. Wind-breaks, shelter-belts, and forest plantations. Methods of propagation, planting, and protection. Two hours attendance. Four hours library and field work. First semester. Duppert

B. **Farm Forestry**—An adaptation of course A for students in the short course of the Agricultural High School. Sixteen lectures. Duppert

## GEOGRAPHY AND CONSERVATION

CONSERVATION AND SOIL SURVEYS

Head Professor Condra, Associate Professor Loveland, Assistant Professor Bengtson

The agricultural subjects of this department are: Courses 1, 2, 4, 5, 6, 21, 23, 24 and 28. Course 1 considers the origin and description of land forms. Course 2 treats the structure, climate, topography, resources and industries of North America. It describes the various soil regions. Course

4 is especially designed to meet the need of Forestry and agricultural students. Course 5 is planned for persons who wish a detailed description of the mineral fuels, forest and water resources and their industries. Course 6 is agricultural technology, giving the regions, processes, and products of the leading agricultural industries. Course 21 is a field study of lands. Numbers 23 and 24 are on soil survey. Course 28 gives the structure, climate, surface feature and industries of Nebraska.

**Nebraska Conservation and Soil Survey**—This survey is directed by the department of Geography and Conservation. It is a natural resource survey in studying soil, water, forest and problems in development based thereon. Students wishing to prepare for work on soil surveys should take courses 1, 21, 23, 24, and 28. Laboratory courses in soils, necessary for survey work, are offered in the department of Agronomy.

1. **The Land**—A lecture and laboratory course in practical physiography. Some of the topics treated are: The common minerals and rocks; structures; relief features of the land; origin and detailed description of the land forms produced by wind, ground water, rivers, and glaciers; map interpretation and classification. The lectures are fully illustrated by lantern slides, maps, models, and specimens. Two hours attendance. Two hours laboratory and two hours library and preparation. Two hours credit. Open to all. First semester on city campus. Condra, Bengtson

2. **North America**—The leading geographic conditions, such as structure, topography, harbors and coast line, climate and the natural resources are treated with considerable detail in their relation to the industrial, political, and social development of the topographic regions and countries. Most time is given to United States and Mexico. The Great Plains region is emphazised. Lectures fully illustrated. Laboratory studies based on topographic and physical maps, climatic charts, atlases, and models. Attendance two hours. Laboratory, library and preparation four hours. Two hours credit. Second semester. Condra, Bengtson

4. **The Atmosphere (Meteorology)**—This course is designed to meet the practical needs of students of agriculture and forestry. The importance of temperature, humidity, and movements of the atmosphere to forest and agricultural problems is studied in detail. Students are taught the construction of weather maps and climatic charts; forecasting; and the use and care of meteorological instruments. Given at Farm campus first semester for agricultural students, at city campus second semester for foresters. Two hours attendance. Four hours laboratory and preparation. Two hours credit. Loveland

5. **Industrial Geography**—This course is a close study of the mineral fuels, forest, and water resources of the United States and their conservation or development. Detailed studies are made of the regions, processes and products of the following industries: Coal, coke, petroleum, iron and steel, lumber, turpentine, pulpwood and rubber. Lectures are fully illustrated by slides, charts and specimens. Two hours attendance. Four hours library and preparation. Two hours credit. Open to all. First semester. Condra, Bengtson

6. **Agricultural Industries**—Practical studies are made of the following industries: Cotton, corn, cattle, sheep, wheat, rice, tobacco, beet and cane sugars, citrous fruits, apples, coffee and tea. The processes involved in converting raw material into the finished articles of commerce are emphasized. The forms, processes, and commercial relations are illustrated by means of specimens and lantern slides. This is a course in practical agricultural technology. Two hours attendance. Four hours library, museum and preparation. Two hours credit. Second semester. Condra, Bengtson

21. **Field Work**—Open to all men students. Excursions are made to the valleys of Salt Creek, Blue River and the Platte to study the various surface features such as flood plains, benches, talus slopes, scarps, bluffs and ridges. The sand dredges, gravel pits, clay pits, and quarries are examined and described. Use of the level, camera, and drawing materials as employed on surveys. Interpretation of topographies and origin of different soil types emphasized. Field trips on certain Saturdays. One or two hours credit. First and second semesters. Bengtson

22. **Field Work**—21 continued. First and second semesters.

23. **Soil Survey**—A field course in practical soil classification and mapping. The methods used in state and national surveys are exemplified. Designed especially for agricultural students. See instructor before registering. Two hours credit. First and second semesters. Condra

24. **Soil Survey**—Course 23 continued.

28. **Agricultural Geography**—A course emphasizing the physiography and industries of our home state. The topographic and soil regions are carefully studied, especially with respect to their agricultural relations. Structures, land erosion, ground water, and rural water supplies are emphasized. Lectures are given by men representing different phases of state development and survey activities. Designed for those who wish to

know Nebraska better. Lectures illustrated. Some field trips are made to places of physiographic or industrial interest. Two hours credit. Second semester. Bengtson

## HORTICULTURE

Professor Emerson, Assistant Professor Westgate,* Assistant Professor Cooper

### GENERAL INFORMATION

The laboratories of the department are provided with charts, models, and specimens illustrating various phases of horticulture. Greenhouse room is available for the plants used in experimental work. A small nursery in the horticultural grounds furnishes much of the material used in the laboratory and at the same time illustrates practical methods of propagating various plants. The orchards, vineyards and small fruit gardens of the Experiment Station afford practice work in pruning and training fruits and present the opportunity for comparison of various cultural methods. The farm campus and newly established arboretum furnish very good material for the study of landscape gardening. A limited number of advanced students who desire to fit themselves as teachers or investigators will be employed at a moderate compensation to assist in the laboratory of the Agricultural High School during the winter or to help in the experimental work of the Experiment Station during the summer. The investigations now being conducted by the department on the subject of heredity afford especially favorable opportunities to graduate students.

Botany 1 and 2 should precede all college courses in horticulture and must precede courses 7 and 8. All college courses are open to women as well as to men, but course 6 is especially recommended to women. Courses 5, 9 and 10 are open only to students specializing in horticulture. Students taking course 9 or 10 will ordinarily find it necessary to be at the Experiment Station during the summer.

### PRIMARILY FOR UNDERGRADUATES

2. **Orcharding**—A detailed consideration of orchard management. The tree fruits grown in Nebraska are studied according to the following scheme: Selection and propagating of varieties, choice of site, preparation of the land, planting, cultivation, cover crops, fertilizers, wind-breaks, pruning, spraying, protection from frost, harvesting, packing, storing, mar-

* Resigned.

keting; renovating old orchards. Three hours attendance. Two hours laboratory. Two hours library. Two hours preparation. Three hours credit. First semester. Cooper

3. **Apple Judging**—A study of fall and winter varieties of apples adapted to Nebraska. Practice in judging with and without score cards, identifying and describing varieties, preparing exhibits, packing and storing, etc. One hour attendance. Four hours laboratory. One hour library. Two hours credit. First semester. Cooper

4. **Fruit and Vegetable Gardening**—Small fruits adapted to Nebraska are considered according to the scheme outlined for tree fruits in course 2. A part of the time will be devoted to a consideration of the more important garden vegetables. Three hours attendance. Two hours laboratory. Two hours library. Two hours preparation. Three hours credit. Second semester. ———

6. **Ornamental Gardening**—A consideration of the principles of landscape gardening with practice in landscape designing. A study of ornamental trees, shrubs and other plants adapted to planting in Nebraska; their classification, culture, and decorative value. Two hours attendance. Two or four hours laboratory. One or two hours library. One hour preparation. Two or three hours credit. Second semester. ———

FOR UNDERGRADUATES OR GRADUATES

7. **Principles of Plant Breeding**—An elementary study of the principles underlying plant improvement, including simple discussions of the following: How plant characters arise and disappear, sports or mutations, bud variation. How characters are inherited, alternate versus blended inheritance. Mendelian and non-Mendelian inheritance. Appearance and inheritance of latent characters. Reversion. Correlation of characters in inheritance. Degree of development of characters, or fluctuation due to environment. Adaptation. Statistical study of fluctuations. Inheritance of fluctuations. Effect of selection in modifying the type of self and open-pollinated plants. Pure lines. Mass selection versus isolation of biotypes. Pedigree breeding. Hybridization as a means of combining desirable parent characters. Inbreeding. Students will study and classify variations in wild and cultivated plants, prepare a herbarium of variations, practice hybridizing plants, and study hybrid material in the greenhouse and laboratory. Two hours attendance. Two hours laboratory. One hour library. One hour preparation. Two hours credit. First semester. Emerson

8. **Genetics**—Current theories of variation and heredity; their bearing upon plant breeding. A critical study of the published results of recent investigations. Assigned readings and consultation. Six or nine hours library. Two or three hours credit. Second semester. Emerson

9. **Horticultural Problems**—The study of assigned problems in plant breeding or in the production of horticultural crops. In the main only problems closely related to the investigation being conducted in the Experiment Station will be assigned. Laboratory or field work with assigned readings, consultation, and the preparation of a satisfactory thesis. Five to twelve hours laboratory. One to three hours library. Two to five hours credit. First and second semesters. Emerson

10. **Horticultural Problems**—Continuation of 9. First and second semesters.

AGRICULTURAL HIGH SCHOOL COURSES

Courses A and B are for first-year men, courses C and D for second-year women, courses E and F (elective) for regular fourth-year men and irregular third-year men.

A. **Home Horticulture for Men**—The management of the home orchard, including the propagation, culture, harvesting, and storing of such fruits as the apple, pear, cherry, plum, peach, raspberry, blackberry and strawberry. Two hours laboratory. Two hours attendance. First semester.

B. **Home Horticulture**—A continued. The ornamentation of the farm home, including the selection and care of our best ornamental plants, also the home vegetable garden. Each vegetable studied with reference to soil cultivation, varieties, harvesting, and uses. Two hours attendance. Two hours laboratory. Second semester.

C. **Home Horticulture for Women**—The home orchard and vegetable garden. Principles of ornamental gardening as applied to the home. Two hours attendance. Two hours laboratory. First semester.

D. **Home Horticulture**—C continued. Second semester.

E. **Commercial Horticulture**—Commercial value of the various fruits, also the methods of meeting the market conditions, profits in fruit growing, etc. Two hours attendance. Two hours laboratory. First semester.

F. **Commercial Horticulture**—E continued.—Market gardening and the principles of landscape design. Two hours attendance. Two hours laboratory. Second semester.

## HOME ECONOMICS

Professor Loomis, Adjunct Professor Davis, Adjunct Professor Olsen, Miss Nesbit, Miss Hedges, Miss Brown, Miss Richards, Miss Ohlsen, Miss Miskell

### GENERAL INFORMATION

The courses in this department are planned to meet the needs of three classes of students:

(1) Those students who are specializing in other lines of study and desire some knowledge of home economics as part of a general education.

(2) Those students who desire a special study of home economics together with the arts and sciences necessary for the successful management of homes.

(3) Those students who wish to teach domestic science and art or home economics.

Since the larger part of the billions of dollars spent annually in the United States for food, clothing and shelter is spent by women and since much of the comfort, health and efficiency of the family depend upon the management of the home, courses in home economics are planned to help prepare women for these responsibilities.

Courses are required in related subjects, hygiene, sociology, arts and sciences. Approximately one-fourth of the work is given in the Home Economics Department, one-fourth is in science and one-fourth in language and history. In the Junior and Senior years a part of the work is elective.

The lectures are given on the city campus or preceding laboratory periods in Home Economics Hall. This building, besides affording a dormitory for students in the Agricultural High School, contains six well equipped laboratories, a practice dining room and kitchen and a small modern laundry. The Hall offers an excellent opportunity for practice work in household administration problems.

For a major in Home Economics in the Teachers College the following courses are required: 1, 2, 3, 4, 5, 6, 9, 10, 13 and 14; for a double minor, courses 1, 2, 3, 4, 5, 6, 13 and 14; for a minor in Domestic Science, 3, 4, 5, 6 and one of the following courses 1, 2, 7 and 8; and for a minor in Domestic Art, 1, 2, 7, 8 and one of the following courses 3, 4, 5 and 6.

1. **Sewing and Design**—Fundamental principles of hand and machine sewing applied to making of household articles, undergarments and shirt

waist suit. Drafting and use of patterns. Repairing, by patching and darning. Textiles, their manufacture, quality and value. Principles of design applied to Household Art. Two hours attendance. Four hours laboratory. Three hours outside preparation. Three hours credit. First semester. Davis, Brown, Olsen

2. **Sewing and Design**—1 continued. Second semester.

3. **Foods: Selection and Preparation**—Composition and function of typical foods; fundamental principles and processes of cooking and their application in the preparation of individual dishes; nutritive and money values. Should be preceded by Chemistry 1 and 2. Two hours attendance. Six hours laboratory. One hour outside preparation. Three hours credit. First semester. Olsen, Hedges, Miskell

4. **Foods: Selection and Preparation**—3 continued. Second semester.

5. **Advanced Food Study**—Preservation of foods. A study of the manufacture and choice of foods from the economic standpoint. Development of the kitchen and its apparatus. Comparison of the cost, quality and sanitation of foods manufactured outside and inside of the home. Three lectures. Six hours laboratory. Three hours credit. First semester. Loomis, Olsen, Hedges, Richards

6. **Dietetics**—Consideration of problems of digestion and metabolism. Study of dietaries of given cost and their adaptation to varying conditions of health, age and environment. Institutional dietaries. School lunch rooms. Three hours attendance. Six hours laboratory. Three hours credit. Second semester. Loomis, Olsen, Hedges, Richards

7. **Textiles and Clothing**—Crinoline modeling and advanced work in drafting, cutting, fitting and finishing gowns. Millinery, construction of frames, covering and trimming. Embroidery, the principal stitches used in decorative art and their application. Textiles, microscopical and chemical tests. Design, color work. Two hours attendance. Four hours laboratory. Three hours outside preparation. Three hours credit. First semester. Davis, Brown

8. **Textiles and Clothing**—7 continued. Second semester.

9. **Household Administration**—House plans and furnishings; ventilation, heating, lighting, water supply, disposal of waste; management of household affairs, division of income, domestic service, and home nursing; care of the house. Two hours attendance. Two hours laboratory. Five hours outside preparation. Three hours credit. First semester. Loomis

10. **Household Administration**—9 continued. Second semester.

11. **Survey Course in Food Study**—For students in the College of Arts and Sciences who desire a general knowledge of foods, their composition, preparation and place in the dietary. Two lectures. Four hours laboratory. Two hours credit. First semester. Open only to students above the Freshman year. Not required in the Four-Year Home Economics Group. Olsen, Hedges, Richards

12. **Survey Course in Foods**—A continuation of 11. Includes the preparation and service of simple dietaries for adults and children in health and disease.

13. **Teachers' Course**—Theory and method of teaching Home Economics. Required of candidates for the University Teachers' Certificate in Home Economics. Lectures with practice teaching. Two hours attendance. Four hours outside preparation, including practice teaching. Two hours credit. First semester. Loomis, Davis

14. **Teachers' Course**—13 continued. Second semester.

Agricultural Engineering 5. **Wood Work and Interior Finish**—First semester. Baer

Agricultural Engineering 18. **Wood Work and Interior Finish**—Second semester. Baer

AGRICULTURAL HIGH SCHOOL COURSES

A. **Sewing and Design**—Fundamental principles of hand and machine sewing applied to making of household articles and undergarments. Repairing by patching and darning. Textiles, their manufacture, quality and value. Principles of design applied to household art. Three hours attendance. Six hours laboratory. First semester.

B. **Sewing and Design**—A continued. Second semester.

C. **Cooking**—Elementary study of the selection and preparation of food based upon its composition. Two hours attendance. Four hours laboratory. First semester.

D. **Cooking**—Continuation of C.

E. **Advanced Cooking**—Preservation of food. A study of the choice of food for adults and children in health and disease. Preparation and serving of lunches and meals. Two hours attendance. Four hours laboratory. First semester. (See L.)

F. **Advanced Cooking**—Continuation of E. (See M.)

G. **Household Art**—Drafting and use of patterns. Cutting, fitting and finishing of dresses. Simple embroidery. Millinery. Textiles, including care, cost and hygiene of clothing. Three hours attendance. Six hours laboratory. First semester. (See L.)

H. **Household Art**—Continuation of G. (See M.)

I. **House Practice**—Decoration and care of the house. The study begins with the student's room and includes lecture and laboratory work and excursions. One hour attendance. Two hours laboratory. First semester. I must be taken in connection with C.

J. **House Practice**—Construction, lighting and heating of the home. Continuation of I and taken in connection with D.

K. **House Practice**—An elementary study of problems in household management. One hour attendance. Two hours laboratory. First semester. K must be taken in connection with E.

L. **Normal Course in Domestic Science and Art**—Seniors in the Normal Course will have two hours attendance and four hours laboratory in both C and G and the same amount of time will be spent in L. A study of work in cooking and sewing that may be introduced into rural schools with very little equipment.

M. Continuation of L.

## MILITARY SCIENCE AND TACTICS

[See College of Arts and Sciences]

## PHYSICAL EDUCATION

[See College of Arts and Sciences]

## ZOOLOGY

[See College of Arts and Sciences]

# The Agricultural Experiment Station for Nebraska

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(The University Board of Regents)

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HON. WILLIAM GUNN WHITMORE.....Valley
HON. VICTOR GERALD LYFORD.....Falls City
HON. CHARLES BARNEY ANDERSON.....Lincoln
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JAMES STUART DALES, M. Ph., Financial Secretary.
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* VERNON VILAS WESTGATE, A. M., Assistant in Horticulture.

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FRITZ KNORR, B. Sc., Superintendent Experimental Substation, Scottsbluff.

SENATOR WILLIS PERIN, Farm Superintendent.

JOHN RALPH COOPER, B. Sc., Assistant in Horticulture.

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* Resigned.

## THE CENTRAL EXPERIMENT STATION

The Nebraska Agricultural Experiment Station, carried as a department of the College of Agriculture of the University of Nebraska, is maintained from funds appropriated by Congress, supplemented by state appropriations. Under the provisions of the Hatch Bill, each state and territory that had established an agricultural college under the land grant act of 1862 was offered funds to establish, in connection therewith, an agricultural experiment station. Nebraska assented to the conditions and was one of the states to receive immediate benefits from the act.

The work contemplated by the law providing for these experiment stations is set forth as follows in section 2 of the act establishing the station:

SECTION 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under the varying series of crops; the capacity of new trees or plants for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.

On March 16, 1906, an act known as the Adams act became effective, granting increased support to the Experiment Station for purely technical investigations along the lines mentioned in the Hatch act under which the Experiment Station was established, and since the acceptance of this fund the Experiment Station has been conducting these technical lines of investigation in accordance with the act.

The central experiment station is located at the University Farm, except the Finance Office, which is located at the University campus. The farm comprises a tract of 320 acres located three miles east of the University, having street car connections. About one hundred acres is now laid off in

experiment plats for field crops, fruits, and vegetables. The animals used for experiment are in a measure furnished from the herds of cattle, sheep and hogs used for instructional purposes. The offices of the Director and of the departments of Animal Husbandry and Farm Management, and the Agricultural Library, are in Agricultural Hall. The offices of the departments of Instructional Agronomy, also of Agricultural Chemistry, and the laboratories for investigation in these lines are in Experiment Station Hall. The Departments of Horticulture, Agricultural Botany, Entomology and the offices of Experimental Agronomy are in Plant Industry Hall. Dairy Husbandry and Animal Pathology have separate buildings.

## THE EXPERIMENTAL SUBSTATIONS

**North Platte Substation.** The Experimental Substation provided for by the Legislature of 1903 is located in Lincoln County, three miles south of North Platte, on a tract of 1,920 acres. This farm contains 270 acres of bench land with an elevation of about 2,800 feet. About 140 acres of this farm is level table-land with an elevation of 3,000 feet, the remainder of the farm being rough canyon and table-land devoted to pasture. The experiments in crop and animal production upon this farm are comparable with nearly all the crop production and animal industry of Central Nebraska. Experiments in crop production are conducted entirely without irrigation. Bulletins are published from time to time through the central experiment station.

**Valentine Substation (the Sand Hills Station).** The Legislature of 1909 provided for an additional substation west of the second guide meridian and north of the sixth standard parallel. This station was located by the Regents, after due consideration, at Valentine, Nebraska, upon a portion of the Military Reservation adjoining the town to the southeast, a permanent lease being secured from the War Department to section 32, the west half of section 33, and that part of the southeast quarter of section 33 lying northwest of the Niobrara river,—all in township 24 north, range 27 west, in Cherry County, Nebraska. Upon request to the citizens of Valentine, a deed was given to the Regents for the University to 40 acres of land lying immediately west of section 32, being the northeast quarter of the southeast quarter of section 31, township 24 north, range 27 west, in Cherry County, Nebraska. A Superintendent's house, a barn, and other buildings have been erected upon the deeded land, the entire tract has been

fenced, and preparations have been made and active experimental work began in the spring of 1911.

**The Scottsbluff Substation.** The Legislature of 1909 also provided for an appropriation to be used in co-operation with the United States Department of Agriculture to study irrigation methods and crop production in the North Platte Valley. 160 acres of land located on the southeast quarter of section 21, township 23 north, range 57 west, was selected for this purpose and was withdrawn from entry by the Reclamation Service and assigned to the use of the United States Department of Agriculture and the Nebraska Experiment Station for the purposes above named. Experimental work in crop rotation, the application of water to the land, and other questions relative to the development of agriculture in the North Platte Valley are in progress. Work in dry land agriculture is also being studied on land which does not receive irrigation water.

**The Culbertson Demonstration Farm.** The Legislature of 1911 made an appropriation to establish experimental work at Culbertson under such conditions as the Regents might determine. After several trips of investigation, the Regents on April 13, 1912, purchased from Mr. W. H. Ferguson the southeast quarter of section 9, township 3, range 31 west, 160 acres of land, for a demonstration farm. The farm is located about one-half mile east of the town of Culbertson, on the north side of the main traveled road. It slopes toward the road and is somewhat rolling. It is all under an irrigation ditch, so that it may be farmed under irrigation if desired. The Regents did not acquire water rights with the land.

Only a small portion of the farm came into immediate possession of the Regents, so that not much farming has been carried on. A superintendent was placed in charge. A residence has been erected, and a small tool shed and stable for temporary use. It is expected that the Legislature of 1913 will make appropriations to complete the equipment of this farm.

## EXPERIMENT STATION BULLETINS

Each year the Station publishes at least four bulletins. These contain the results of investigations in subjects pertaining to agriculture. Many of these bulletins cover lines of technical investigation upon scientific subjects relating to agriculture. The reports of investigation at all substations are published through the central station. The edition of each bulletin varies from 3,000 to 10,000 in technical bulletins and from 10,000 to 30,000 or more in regular bulletins. An Annual Report of 5,000 copies

is published, containing a summary of the work of the year and experimental results of interest to investigators. The publications of the Station since those reported in the last General Catalog are as follows:

Research Bulletin No. 1. A Dry Rot of the Irish Potato Tuber. By E. Mead Wilcox, George K. K. Link, and Venus W. Pool. 5,000 copies.

Research Bulletin No. 2. The Inheritance of Quantitative Characters in Maize. By R. A. Emerson and E. M. East. (In press.) 3,000 copies.

Research Bulletin No. 3. Studies on the Relation of the Non-available Water of the Soil to the Hygroscopic Coefficient. By F. J. Alway. (In press.) 3,000 copies.

Bulletin 123 (Substation Bulletin No. 9). Fattening Hogs in Nebraska. By W. P. Snyder. Distributed February 22, 1912. 30,000 copies.

Bulletin 124 (Substation Bulletin No. 10). Fattening Hogs in Nebraska. By W. P. Snyder. Distributed June 15, 1912. 5,000 copies. (Technical bulletin).

Bulletin 125. Wheat Breeding Experiments. By E. G. Montgomery. Distributed March 15, 1912. 30,000 copies.

Bulletin 126. Native Seed Corn. By E. G. Montgomery. Distributed March 20, 1912. 30,000 copies.

Bulletin 127. Competition in Cereals. By E. G. Montgomery. Distributed May 8, 1912. 5,000 copies.

Bulletin 128. Studies in Water Requirements of Corn. By E. G. Montgomery and T. A. Kiesselbach. Distributed May 8, 1912. 5,000 copies.

Bulletin 129. Results of the Douglas County Cow Testing Association. By A. L. Haecker and J. H. Frandsen. Distributed May 1, 1912. 25,000 copies.

Bulletin 130 (Substation Bulletin No. 11). Forage Rations for Growing Horses. By W. P. Snyder. Distributed June 1, 1912. 25,000 copies.

Bulletin 131 (Extension Bulletin No. 7). Smuts of Nebraska Cereals. By E. Mead Wilcox. Distributed August 30, 1912. 20,000 copies.

Bulletin 132. Beef Production. By H. R. Smith. Distributed October 21, 1912. 25,000 copies.

Bulletin 133 (Extension Bulletin No. 8). Care of Milk and Cream on the Farm. By J. H. Frandsen. Distributed October 21, 1912. 25,000 copies.

Bulletin 134. A Dry Rot of the Irish Potato Tuber. By E. Mead Wilcox and George K. K. Link. 20,000 copies.

Bulletin 135 (Substation Bulletin No. 12). Growing Crops in Western Nebraska. By W. P. Snyder and W. W. Burr. (In press.) 20,000 copies.

Bulletin 136. Alfalfa Inoculation Tests. By C. W. Pugsley. 20,000 copies.

Extension Bulletin No. 3. The Germination Test for Seed Corn. By T. A. Kiesselbach. Distributed February 12, 1912. 40,000 copies.

Press Bulletin No. 37 (Extension Bulletin No. 6). Spraying Apple Trees. By R. F. Howard. Distributed April 18, 1912. 22,000 copies.

Press Bulletin No. 38 (Extension Bulletin No. 9). The Selection and Care of Seed Corn. By Erwin Hopt. Distributed September 7, 1912. 30,000 copies.

Twenty-fifth Annual Report. Presented to the Governor February 1, 1912. 5,000 copies.

The Experiment Station desires to assist the farmers of the state in solving many of the difficult and perplexing problems that affect our agricultural production, and to this end is carrying on investigations along lines that aid the practical farmer. The co-operation of all who are interested in the improvement of agricultural practice is invited.

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1914/15

Series XIX No. 4

# Bulletin of The University of Nebraska

## ANNUAL CATALOG

OF THE

## SCHOOL OF AGRICULTURE

A SECONDARY SCHOOL

OF THE

## COLLEGE OF AGRICULTURE

THE FOUR YEARS COURSE

UNIVERSITY OF ILLINOIS LIBRARY

ANNOUNCEMENT

1914-15

Published by the University April 8, 1914
LINCOLN, NEBRASKA

The Bulletin of the University of Nebraska is published monthly in March, semi-weekly in April, and monthly in May, June, August and November of each year by the University of Nebraska. Entered at the Post-Office at Lincoln, Nebraska, as second-class matter under Act of Congress July 16, 1894.

UNIVERSITY OF ILLINOIS
JUN 20 1914
PRESIDENT'S OFFICE

Series XIX No. 4

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**The College of Agriculture** offers courses to all graduates of four year accredited high schools. Graduates of such a course should apply for entrance to the College and not to the School of Agriculture. A new agricultural group (the Agricultural Practice Group) is now offered for students who can spend but two years at the College of Agriculture. This College opens on September 16, 1914 and all students should present themselves for admission at that time.

The statements in the above paragraph are not intended to arbitrarily exclude the graduates of four-year high schools from the School of Agriculture. If for any reason a graduate of such a high school wishes to enter the School instead of the College he will be admitted and allowed to graduate in two years.

**The School of Agriculture** is a secondary school in which agriculture is given special emphasis. Students from the farms or without sufficient high school credit to enter the College may enter this school. Graduation from this school does not lead to a degree, but the courses offered are intended to specially qualify young men for practical farmers and young women for efficient home keepers. The year opens October 12, 1914, and those wishing to enter the school should present themselves at that time.

A separate catalog is issued for the four-year course in the College of Agriculture.

For further information, write to the Principal of the School of Agriculture University Farm, Lincoln.

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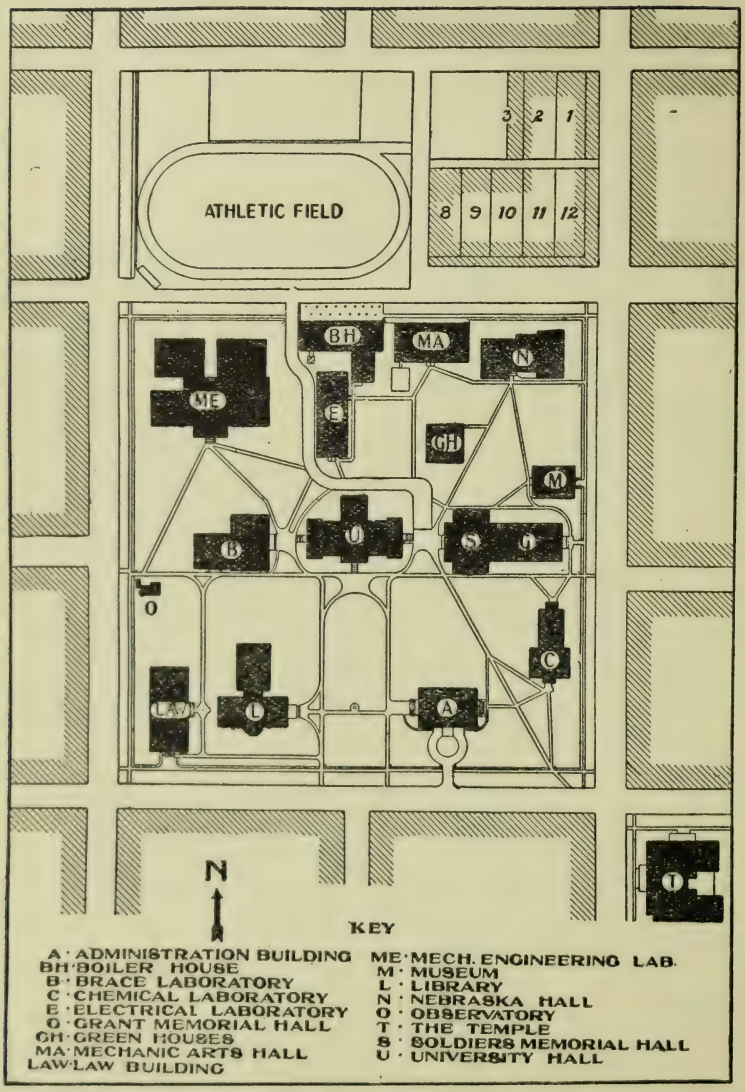
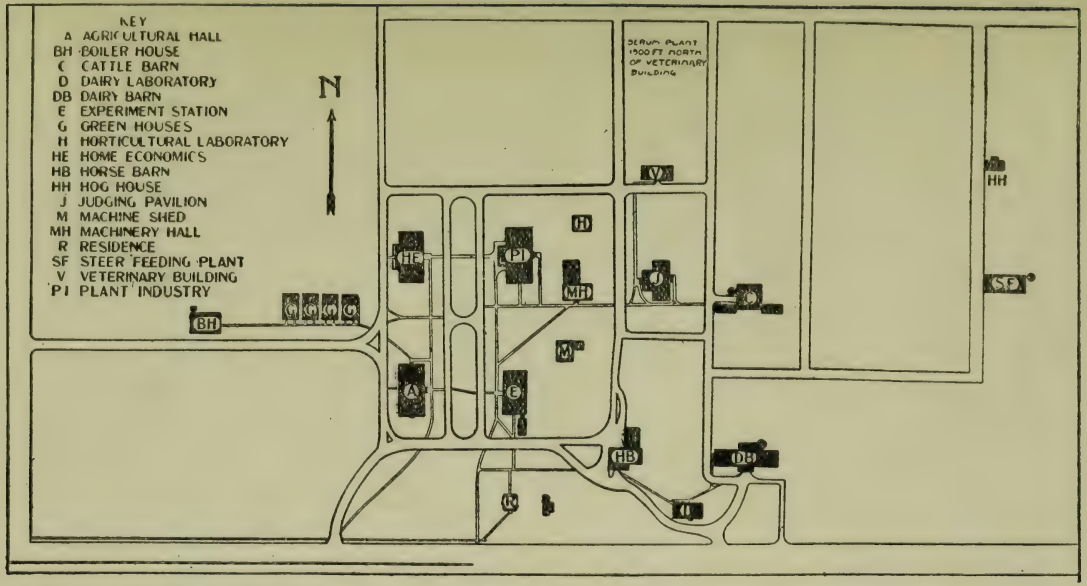
## SCHOOL OF AGRICULTURE CALENDAR

| | | |
|---|---|---|
| **1914** | | |
| October 12 | Monday, 8 a. m. | First semester begins. |
| November 26 | Thursday | Thanksgiving holiday. |
| December 21 | Monday, 8 a. m. | Christmas vacation begins. |
| **1915** | | |
| January 2 | Saturday, 12 m. | Christmas vacation ends. |
| January 23 | Saturday | First semester ends. |
| January 25 | Monday | Second semester begins. |
| April 23 | Friday | Second semester ends. |
| April 23 | Friday | Annual commencement. |




THE UNIVERSITY CAMPUS IN THE CITY




THE UNIVERSITY OF NEBRASKA FARM CAMPUS.

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*FREDERICK JAMES ALWAY, Ph. D., Head Professor of Agricultural Chemistry.

EDWIN MEAD WILCOX, Ph. D., Head Professor of Agricultural Botany. Plant Industry Hall 304.

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GEORGE EVERT CONDRA, Ph. D., Head Professor of Geography and Conservation. Director State Conservation and Soil Survey. University Hall 311.

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ROLLINS ADAMS EMERSON, D. Sc., Professor of Horticulture. Plant Industry Hall 105.

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PERCY BOUSFIELD BARKER, A. M., Professor of Instructional Agronomy. Experiment Station Hall.

THEODORE ALEXANDER KIESSELBACH, A. M., Professor of Experimental Agronomy. Plant Industry Hall 202.

FRED WILBERT UPSON, Ph. D., Professor of Agricultural Chemistry. Experiment Station Hall.

*WILLIAM WESLEY BURR, B. Sc., Soils, Associate in Crops. North Platte.

*ALICE BAIRD ENSIGN, A. B., Adviser to Women.

GEORGE ANDREW LOVELAND, A. M., LL. B., Professor of Meteorology and Section Director United States Weather Bureau. Brace Laboratory.

MYRON HARMON SWENK, A. M., Associate Professor of Entomology and Assistant State Entomologist. Plant Industry Hall 206.

HOWARD JOHN GRAMLICH, B. Sc., Assistant Superintendent of Agricultural Extension. Associate Professor of Animal Husbandry. (Horses) Agricultural Hall 302.

LAZELLE BRANTLEY STURDEVANT, A. M., M. D., Associate Professor of Animal Pathology. Veterinary Hall.

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*Resigned.

CHARLES BOPES LEE, A. M., Associate Professor of Animal Husbandry. Agricultural Hall 104.

FRED EMANUEL JOHNSON, B. Sc., D. V. S., Superintendent of Serum Plant.

NELS AUGUST BENGTSON, A. M., Associate Professor of Geography and Conservation. University Hall 308.

GEORGE WILLIAM HOOD, B. Sc., Associate Professor of Horticulture. Plant Industry Hall.

ERWIN HOPT, B. Sc., Assistant Professor of Agronomy (Crops). Stock Judging Pavilion.

HORACE CLYDE FILLEY, A. M., Assistant Professor of Farm Management. Agricultural Hall 301.

JOHN RALPH COOPER, B. Sc., Assistant Professor of Horticulture. Plant Industry Hall 102.

*GEORGE CLEVELAND WHITE, A. M., Assistant Professor of Dairy Husbandry.

GEORGE KONRAD KARL LINK, A. M., Assistant Professor of Agricultural Botany. Plant Industry Hall 304.

LAURENCE FROYD SEATON, B. Sc., in M. E., Assistant Professor of Agricultural Engineering. Machinery Hall.

HORACE JAMES YOUNG, B. Sc., Assistant Professor of Agronomy. Experiment Station Hall.

OSCAR ROSS MARTIN, A. M., Assistant Professor of Political Economy and Commerce. University Hall 101.

HARLEY MARTIN PLUM, A. M., Assistant Professor of Agricultural Chemistry. Experiment Station Hall.

†HUBERT BIDLER CARPENTER, B. S. A., Assistant Professor of Animal Husbandry.

JOHN WILLARD CALVIN, B. Sc., Assistant Professor of Agricultural Chemistry. Experiment Station Hall.

SIMON WAYNE ALFORD, D. V. S., Station Assistant in Serum Production.

*ROBERT SAMUEL TRUMBULL, A. M., Adjunct Professor of Agricultural Chemistry.

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*Resigned.

†Deceased.

HELEN LEE DAVIS, A. B., B. Sc., Adjunct Professor of Home Economics. Home Economics Hall.

ANNA MARGRETHE OLSEN, B. Sc., Adjunct Professor of Home Economics. Home Economics Hall.

ALVA ALDUS BAER, A. B., Adjunct Professor of Agricultural Engineering. Machinery Hall.

NEAL TOWNLEY CHILDS, M. F., Adjunct Professor of Forestry. Nebraska Hall 105.

EDWIN GARVER WOODWARD, A. M., Adjunct Professor of Dairy Husbandry. Dairy Hall.

FLORENCE ANNA McCORMICK, M. S., Adjunct Professor of Agricultural Botany. Plant Industry Hall 313.

CARRIE BELLE RAYMOND, Director of Music.

JOHN ANDERSON RATCLIFF, A. B., Station Assistant in Experimental Agronomy. Plant Industry Hall 202.

*EARL STEPHEN BISHOP, A. M., Station Assistant in Agricultural Chemistry.

CHARLES ALTON HELM, B. Sc., Station Assistant in Experimental Agronomy. Plant Industry Hall 202.

FRANK CLIFFORD DEAN, A. B., Agricultural Editor. Agricultural Hall 205.

*ORPHA ELLEN NESBIT, B. Sc., Instructor in Home Economics.

MARY ELLEN BROWN, B. Sc., Instructor in Home Economics. Home Economics Hall.

*MABEL MAUDE HEDGES, A. B., Instructor in Home Economics.

CLARE BROWN CORNELL, A. M., Instructor in Cadet Band.

BERNA ANN MISKELL, B. Sc., Instructor in Home Economics. Home Economics Hall.

IVAN DALEY WOOD, B. Sc., in A. E., Instructor in Agricultural Engineering. Machinery Hall.

ELMER EUGENE BRACKETT, B. Sc., in E. E., Instructor in Agricultural Engineering. Machinery Hall.

RALPH WARD DAWSON, B. Sc., Instructor in Entomology. Plant Industry Hall 203.

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*Resigned.

JESSIE GENEVA GREENE, B. Sc., Instructor in Home Economics. Home Economics Hall.

RUSSELL CLAIR JENSEN, A. M., Instructor in Dairy Husbandry. Dairy Hall.

MAUDE MATHES WILSON, B. Sc., Instructor in Home Economics. Home Economics Hall.

ROBERT LEO MOORE, Instructor in Agricultural Engineering. Machinery Hall.

BESSIE LOUISE PARK, Instructor in Physical Education.

MARY S. VANKIRK, Instructor in Home Economics. Home Economics Hall.

MARY VIRGINIA ZIMMER, A. B., Instructor in Mathematics. Agricultural Hall 207.

GLAIDETH GAINEVERE DENNY, A. B., Instructor in German and History. Agricultural Hall 304.

ESTHER MOSHER BURRITT, A. B., Instructor in English. Agricultura Hall 204.

ROY WESLEY EATON, A. B., Instructor in Normal Training. Agricultural Hall 205.

EDITH VIOLET OHLSEN, B. Sc., Instructor in Home Economics. Home Economics Hall.

CHAUNCEY WILLIAM SMITH, Instructor in Physics. Experiment Station Hall.

RUSSELL R. DODDERIDGE, B. Sc., Lecturer in Animal Husbandry. Agricultural Hall 104.

HESTER MARY RUSK, A. B., Instructor in Agricultural Botany. Plant Industry Hall 312.

*ROSE AMELIA SHONKA, Instructor in Home Economics.

ETHEL LORA BREINER,, Instructor in Home Economics. Home Economics Hall.

ARTHUR EUGENE ANDERSON, A. B., Assistant State Leader in Agricultural Extension. Agricultural Hall 301.

HULDAH PETERSON, B. S., Assistant in charge of Boys and Girls Clubs. Agricultural Hall 301.

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*Resigned.

EMMA REED DAVISSON, Assistant in charge of Women's Clubs. Agricultural Hall 301.

HOWARD ELMER VASEY, B. Sc., Assistant in Agricultural Botany. Plant Industry Hall 304.

EDNA CLARA NOBLE, B. L., Library Assistant in charge of University Farm Library. Agricultural Hall.

LEROY MALLELIEU GATES, B. Sc., Assistant in Entomology. Plant Industry Hall 204.

GRANT HAROLD LANPHERE, Assistant in Physics, School of Agriculture. Experiment Station Hall.

EDGAR ALEXANDER MARKHAM, Assistant in Dairy Husbandry. Dairy Hall.

JAMES COWAN, M. E., Superintendent Experimental Substation, Valentine.

FRITZ KNORR, B. Sc., Superintendent Experimental Substation, Mitchell.

SENATOR WILLIS PERIN, Farm Superintendent.

HOMER LEROY NYE, Foreman Demonstration Farm, Culbertson.

### Fellows, Scholars, and Graduate Assistants

ARTHUR GREY GEORGE, B. Sc., Assistant in Instructional Agronomy.

JAMES LLOYD THOMAS, B. Sc., Assistant in Instructional Agronomy.

GEORGE HOWARD BROTHER, B. Sc., Assistant in Agricultural Chemistry.

FRANKLIN DAVID KEIM, B. Sc., Assistant in Instructional Agronomy.

HELEN AGATHA SAWYER, A. B., Assistant in Home Economics.

ARTHUR W. MEDLAR, A. B., Assistant in Farm Management.

### Standing Committees of the Faculty

Course of Study—Professor Bradford (chairman), Professors Loomis, Bruner, Chase, Morrill, Barker, Frandsen.

Farmers' Institutes—Professor Pugsley (chairman), The Dean, Professors Emerson, Kiesselbach.

Schedule of Classes—Professor Chase (chairman), Professors Bradford, Loughridge, the Registrar.

## GENERAL INFORMATION

### PURPOSE

The School of Agriculture is designed to train men and women for usefulness on the farm. To men it gives a full training in all agricultural subjects. The training offered to women is of a character to fit them for duties and responsibilities of farm homes. In addition to this emphasis upon the practical side of education, the course aims to give a cultural training equivalent to that given by the average high school. Men and women are thus fitted for a broad and useful citizenship by combining in their education both large-minded culture and practical efficiency.

### REQUIREMENTS FOR ADMISSION

**Common School Graduates.** Any one who is sixteen years of age and who has completed the common school course of study may enter the School of Agriculture. Students entering directly from the eighth grade of the common schools require four years for completion of the regular course.

**Graduates of Accredited One, Two and Three Year High Schools.** The courses in the School of Agriculture are now so planned that graduates of one-year high schools may complete the regular four years course in three years and graduates of two-year high schools may finish in two years. Graduates of three-year high schools are offered a choice. They may graduate from the School of Agriculture in two years or may enter the College of Agriculture after one year of attendance in the School.

**High School Credits.** High School credits in the academic subjects viz., English, Algebra, History, etc., from regularly accredited high schools are accepted at face value for graduation from the School of Agriculture. Graduates of accredited high schools which maintain a two, three, or four years course in agriculture, approved by the School of Agriculture, may also receive partial credit in the technical subjects.

**Mature and Experienced Farmers.** Experienced men and women who have reached mature years without having had an opportunity for a technical training are permitted to register as special students. This permits them to choose such work as they wish without taking the entire course.

## ADMISSION TO THE UNIVERSITY

Although the School of Agriculture is not primarily a preparatory school, but rather a technical finishing school, men and women who complete the four years course in Agriculture or Home Economics in the University Preparatory Group may enter any of the undergraduate colleges without examination.

## NORMAL TRAINING

The School of Agriculture is officially recognized by the State Superintendent of Public Instruction of Nebraska as one of the Normal Training High Schools of the state. Graduates of the School who have completed the Normal Group are accordingly granted county certificates qualifying them to teach in the rural and village schools of the state. The School thus aims to lead the way in sending young men and women into our rural districts who are well equipped as teachers and yet in entire sympathy with rural conditions, capable of becoming leaders in improving rural conditions.

## ELECTIVES

Upon completion of the work of the third year, the student is permitted to choose one of three groups of the Senior year—the regular Technical Group, the University Preparatory Group, or the Normal Training Group. The Technical Group gives additional practical training for farm or home life; the University Preparatory Group is intended for those who wish to continue their work in the College of Agriculture; and the Normal Training Group must be taken by those who wish to earn a county certificate to enable them to teach in rural or village schools.

## ELECTIVES FOR WOMEN

Upon the completion of the work of the second year, women are permitted to choose either the regular Technical Group or the Normal Training Group. Women who wish to graduate in the Normal Training Group must begin with the Junior year.

## RELIGIOUS LIFE

The Y. M. C. A. and Y. W. C. A. have active organizations in the student body of the school. Their work is a prominent feature in student life.

The various churches of East Lincoln carry on active campaigns to enlist the interest of the student body, and large numbers of the students engage actively in the work of these churches.

## SOCIAL LIFE

The social life of the school is under strict supervision of the faculty. Each class has its sponsor, and class events which are held only on Friday and Saturday evenings are carefully sponsored.

## LITERARY SOCIETIES

Two strong literary societies, "The Ophelian," and "The Davisson," furnish opportunity to the students to develop their ability in public speaking and debating, and add to the social life of the school. A major portion of the student body are members or adherents of these societies.

## CHORUS AND GLEE CLUB

Each year glee clubs of men's and women's voices are organized under the direction of competent instructors.

## BAND AND ORCHESTRA

The Cadet Band is a strong organization under the direction of Clare Cornell, leader of the University Cadet Band. Students who play any band instrument are urged to join the band. Band members are not required to drill regularly.

An excellent orchestra is also maintained which gives a concert once each year and plays regularly for Convocation and other public functions of the School. Students who play orchestral instruments are invited to become members of this organization.

## ATHLETICS

Foot-ball, basket-ball, baseball and track-teams are maintained by the school. Athletics are strictly under faculty supervision and the details are handled by an Athletic Board, consisting of both faculty and student members.

## BUILDINGS AND EQUIPMENT

Nowhere in Nebraska can be found a more beautiful spot than the campus of the University Farm. The beautiful trees and artistic lawns

and flower-beds in the hands of an expert landscape gardener make a most appropriate setting for an agricultural institution; they supply an artistic and aesthetic environment for the plant where the practical work of the farm is taught. Seventeen fine, modern buildings are now on the campus for the use of the different departments of instruction.

## LIBRARY

A technical library of 8,000 volumes is housed in Agricultural Hall. This offers opportunity for both research and constant reference work.

## THE SCHOOL YEAR

The school year is divided into two semesters of thirteen weeks each. The first semester opens October 12, 1914, and closes January 23, 1915. The second semester opens January 25, 1915, and closes April 23, 1915.

## FEES

### For Men

| | | |
|---|---|---|
| Incidental, each year | | $6.00 |
| Botany, A, B | Each | 1.00 |
| Botany, C, D | Each | 2.00 |
| Chemistry, A and B | | 3.00 |
| Dairy Husbandry, A, C | Each | 2.00 |
| Wood-work, A and B | | 2.00 |
| Forge, C and D | | 2.00 |
| Farm Machinery, E, F | Each | 2.00 |
| Horticulture, A and B | | 2.00 |
| Automobiles | | 5.00 |
| Change in registration after registration closes | | 2.00 |

### For Women

| | | |
|---|---|---|
| Incidental, each year | | $6.00 |
| Chemistry, A and B | | 3.00 |
| Wood-work, I and J | | 2.00 |
| Home Economics, Cooking, C and D | | 4.00 |
| Cooking E | | 2.00 |
| Cooking F | | 3.00 |
| Home Economics, Sewing A and B | | 2.00 |
| Sewing G and H | | 2.00 |
| Change in registration after registration closes | | 2.00 |

There is no tuition charge whatever, and the incidental and laboratory fees for regular students for one year amount in no case to more than $15 for men and $16 for women. In addition to the small fees, men are required to purchase a suit for Military Drill which costs $11.70. The cost of books is from $5 to $6 per year. The total cost of a year's work, including the cost of board and room, does not, on an average, exceed $200.

## BOARD AND ROOM

Board and room for men can be had in East Lincoln at reasonable rates; students will be assisted by responsible persons in finding suitable lodging places. Women are furnished board and lodging in Home Economics Hall at $20 per month.

## STREET CAR SERVICE

There are direct and commodious street car connections between the University Campus and the University Farm. All cars marked "University Farm," "State University Farm," and "Bethany," come directly to the Farm campus.

For further information address the Principal of the School of Agriculture The University of Nebraska, Lincoln.

## COURSE OF STUDY IN AGRICULTURE

### FIRST YEAR

#### FIRST SEMESTER

| | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| Dairy | 2 | 4 | |
| Stock Judging | | 4 | |
| Horticulture | 2 | 2 | |
| Wood Work | | 4 | |
| Greek and Roman History | 2 | | |
| Algebra | 4 | | |
| English | 4 | | |
| Drill | | | |
| | 14 | 14 = 28 | hours |

#### SECOND SEMESTER

| | | | |
|---|---|---|---|
| Breeds | 4 | | |
| Stock Judging | | 4 | |
| Horticulture | 2 | 2 | |
| Wood Work | | 4 | |
| Algebra | 4 | | |
| English | 4 | | |
| Greek and Roman History | 2 | | |
| Drill | | | |
| | 16 | 10 = 26 | hours |

### SECOND YEAR

#### FIRST SEMESTER

| | | | |
|---|---|---|---|
| Field Crops | 3 | 4 | |
| Forge | | 4 | |
| Botany | 3 | 2 | |
| Chemistry | 3 | 3 | |
| English | 3 | | |
| Algebra | 4 | | |
| Drill | | | |
| | 16 | 13 = 29 | hours |

SECOND SEMESTER

| | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| Field Crops | 3 | 4 | |
| Feeding | 4 | | |
| Forge | | 4 | |
| English | 3 | | |
| Botany | 3 | 2 | |
| Chemistry | 3 | 3 | |
| Drill | | | |
| | 16 | 13 = 29 | hours |

## THIRD YEAR

FIRST SEMESTER

| | | | |
|---|---|---|---|
| Dairy | 2 | 2 | |
| Anatomy and Physiology of Farm Animals | 2 | | |
| Soils | 2 | 2 | |
| Farm Machinery | | 4 | |
| Entomology | 2 | 2 | |
| Physics | 3 | 4 | |
| English | 2 | | |
| Geometry | 2 | | |
| Drill | | | |
| | 15 | 14 = 29 | hours |

SECOND SEMESTER

| | | | |
|---|---|---|---|
| Stock Judging | | 4 | |
| or Dairy | 2 | 2 | |
| Anatomy and Physiology of Farm Animals | 2 | | |
| Soils | 2 | 2 | |
| Farm Machinery | | 4 | |
| Entomology | 2 | 2 | |
| Physics | 3 | 4 | |
| English | 2 | | |
| Geometry | 2 | | |
| Drill | | | |
| | 15 | 18 = 33 | hours |

## FOURTH YEAR

### Technical Group

FIRST SEMESTER

| | | Recitation Hours | Laboratory Hours |
|---|---|---|---|
| Required | English | 4 | |
| | American History | 3 | |
| | Economics | 2 | |
| | Drill | | |
| | | 9 hours | |
| Elective (Students may elect not less than 16 nor more than 21 class hours.) | Soils | 2 | 2 |
| | Grain Judging | | 2 |
| | Farm Management | 3 | |
| | Horticulture | 2 | 2 |
| | Forestry | 2 | |
| | Diseases of Farm Animals | 3 | |
| | Rural Architecture | | 4 |
| | Agricultural Botany | 2 | 2 |
| | Automobiles | 2 | 3 |
| | | 25 to 30 hours | |

SECOND SEMESTER

| | | | |
|---|---|---|---|
| Required | English | 4 | |
| | American History | 3 | |
| | Economics | 2 | |
| | Drill | | |
| | | 9 hours | |
| Elective (Students may elect not less than 16 nor more than 21 class hours.) | Soils | 2 | 2 |
| | Grain Judging | | 2 |
| | Farm Management | 3 | |
| | Horticulture | 2 | 2 |
| | Principles of Breeding | 2 | |
| | Diseases of Farm Animals | 3 | |
| | Rural Architecture | | 4 |
| | Automobiles | 1 | 3 |
| | | 25 to 30 hours | |

## University Preparatory Group

FIRST SEMESTER

| | | Recitation Hours | Laboratory Hours |
|---|---|---|---|
| Required | English | 4 | |
| | American History | 3 | |
| | Mathematics | 4 | |
| | German | 5 | |
| | Physics | 2 | 4 |
| | Drill | | |
| | | 18 | 4 = 22 hours |

SECOND SEMESTER

| | | | |
|---|---|---|---|
| Required | English | 4 | |
| | American History | 3 | |
| | Mathematics | 4 | |
| | German | 5 | |
| | Chemistry | 2 | 4 |
| | Drill | | |
| | | 18 | 4 = 22 hours |

## Normal Group

FIRST SEMESTER

| | | |
|---|---|---|
| Required | English | 4 |
| | American History | 3 |
| | Pedagogy | 3 |
| | Essentials | 6 |
| | Additional Reviews | 3 |
| | Drill | |
| | | 19 hours |

SECOND SEMESTER

| | | |
|---|---|---|
| Required | Agricultural Education | 3 |
| | English | 4 |
| | American History | 3 |
| | Pedagogy | 3 |
| | Essentials | 6 |
| | Additional Reviews | 3 |
| | Drill | |
| | | 22 hours |

## COURSE OF STUDY IN AGRICULTURE

### For Graduates of One-Year High Schools

### SOPHOMORE YEAR

FIRST SEMESTER

| Required: | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| Chemistry | 3 | 3 | |
| Botany | 3 | 2 | |
| Field Crops | 3 | 4 | |
| Drill | | | |
| | 9 | 9 | = 18 hours |
| Elective: | | | |
| Dairying | 2 | 4 | |
| Horticulture | 2 | 2 | |
| Wood Work | | 4 | |
| Forge | | 4 | |
| Stock Judging | | 4 | |

Students choose from electives 2 or 4 hours of recitation and 8 or 10 hours of laboratory work.

SECOND SEMESTER

| Required: | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| Chemistry | 3 | 3 | |
| Botany | 3 | 2 | |
| English | 3 | | |
| Field Crops | 3 | 4 | |
| Drill | | | |
| | 12 | 9 | = 21 hours |
| Elective | | | |
| Breeds | 4 | | |
| Horticulture | 2 | 2 | |
| Wood Work | | 4 | |
| Forge | | 4 | |
| Feeding | 4 | | |
| Stock Judging | | 4 | |

Students choose two elective subjects.

## JUNIOR YEAR

### FIRST SEMESTER

| | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| Dairy | 2 | 2 | |
| Anatomy and Physiology of Farm Animals | 2 | | |
| Soils | 2 | 2 | |
| Farm Machinery | | 4 | |
| Entomology | 2 | 2 | |
| Physics | 3 | 4 | |
| English | 2 | | |
| Geometry | 2 | | |
| Drill | | | |
| | 15 | 14 | = 29 hours |

### SECOND SEMESTER

| | | | |
|---|---|---|---|
| Stock Judging | | 4 | |
| or Dairy | 2 | 2 | |
| Anatomy and Physiology of Farm Animals | 2 | | |
| Soils | 2 | 2 | |
| Farm Machinery | | 4 | |
| Entomology | 2 | 2 | |
| Physics | 3 | 4 | |
| English | 2 | | |
| Geometry | 2 | | |
| Drill | | | |
| | 15 | 18 | = 33 hours |

## SENIOR YEAR

### Technical Group

### FIRST SEMESTER

| | |
|---|---|
| Required: | |
| English | 4 |
| American History | 3 |
| Economics | 2 |
| Drill | |
| | 9 |

| Elective: | Recitation Hours | Laboratory Hours |
|---|---|---|
| Automobiles | 2 | 3 |
| Soils | 2 | 3 |
| Grain Judging | | 2 |
| Farm Management | 3 | |
| Horticulture | 2 | 2 |
| Forestry | 2 | |
| Diseases of Farm Animals | 3 | |
| Rural Architecture | | 4 |
| Agricultural Botany | 2 | 2 |
| | 25 to 30 hours | |

Students may select not less than 16 nor more than 21 class hours.

SECOND SEMESTER

| Required: | Recitation Hours | Laboratory Hours |
|---|---|---|
| English | 4 | |
| American History | 3 | |
| Economics | 2 | |
| Drill | | |
| | 9 | |
| Elective: | | |
| Automobiles | 2 | 3 |
| Soils | 2 | 2 |
| Grain Judging | | 2 |
| Farm Management | 3 | |
| Horticulture | 2 | 2 |
| Principles of Breeding | 2 | |
| Diseases of Farm Animals | 3 | |
| Rural Architecture | | 4 |
| Agricultural Botany | 2 | 2 |
| | 25 to 30 hours | |

NOTE—Students may elect not less than 16 nor more than 21 class hours.

## University Preparatory Group

FIRST SEMESTER

| Required: | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| English | 4 | | |
| American History | 3 | | |
| Mathematics | 4 | | |
| German | 5 | | |
| Physics | 2 | 4 | |
| Drill | | | |
| | 18 | 4 | = 22 hours |

SECOND SEMESTER

| Required: | | | |
|---|---|---|---|
| English | 4 | | |
| American History | 3 | | |
| Mathematics | 4 | | |
| German | 5 | | |
| Chemistry | 2 | 4 | |
| | 18 | 4 | = 22 hours |

## COURSE OF STUDY IN AGRICULTURE

### For Graduates of Two-Year High Schools

### JUNIOR YEAR

#### FIRST SEMESTER

| | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| Required: | | | |
| Botany | 3 | 2 | |
| Chemistry | 3 | 3 | |
| Field Crops | 3 | 4 | |
| Drill | | | |
| | 9 | 9 | = 18 hours |
| Elective: | | | |
| Dairying | 2 | 4 | |
| Horticulture | 2 | 2 | |
| Wood Work | | 4 | |
| Forge | | 4 | |
| Stock Judging | | 4 | |

NOTE—Student elects 10 or 12 hours.

#### SECOND SEMESTER

| | | | |
|---|---|---|---|
| Required: | | | |
| Botany | 3 | 2 | |
| Chemistry | 3 | 3 | |
| Feeding | 4 | | |
| Field Crops | 3 | 4 | |
| Drill | | | |
| | 13 | 9 | = 22 hours |
| Elective: | | | |
| Breeds | 4 | | |
| Horticulture | 2 | 2 | |
| Wood Work | | 4 | |
| Forge | | 4 | |
| Stock Judging | | 4 | |

NOTE—Student elects 8 hours.

## SENIOR YEAR

### Technical Group

FIRST SEMESTER

| Required: | Recitation Hours | Laboratory Hours |
|---|---|---|
| English | 4 | |
| American History | 3 | |
| Physics | 3 | 4 |
| Soils | 2 | 2 |
| Dairy | 2 | 2 |
| Drill | | |
| | 14 | 8 = 22 hours |
| Elective: | | |
| Automobiles | 2 | 3 |
| Anatomy and Physiology of Farm Animals | 2 | |
| Diseases of Farm Animals | 3 | |
| Grain Judging | | 2 |
| Horticulture | 2 | 2 |
| Forestry | 2 | |
| Farm Management | 3 | |
| Rural Architecture | | 4 |
| Entomology | 2 | 2 |
| Farm Machinery | | 4 |
| Agricultural Botany | 2 | 2 |

NOTE—Students may elect not less than 6 hours nor more than 9 hours.

SECOND SEMESTER

| Required: | Recitation Hours | Laboratory Hours |
|---|---|---|
| Automobiles | 2 | 3 |
| English | 4 | |
| American History | 3 | |
| Physics | 3 | 4 |
| Soils | 2 | 2 |
| Drill | | |
| | 14 | 9 = 23 hours |

| Elective: | Recitation Hours | Laboratory Hours |
|---|---|---|
| Dairy | 2 | 2 |
| Anatomy and Physiology of Farm Animals | 2 | |
| Principles of Breeding | 2 | |
| Diseases of Farm Animals | 3 | |
| Grain Judging | | 2 |
| Rural Architecture | | 4 |
| Entomology | 2 | 2 |
| Farm Management | 3 | |
| Farm Motors | | 4 |
| Stock Judging | | 4 |
| Agricultural Botany | 2 | 2 |

NOTE—Students may elect not less than 6 nor more than 9 hours.

### University Preparatory Group

FIRST SEMESTER

| Required: | Recitation Hours | Laboratory Hours |
|---|---|---|
| English | 4 | |
| American History | 5 | |
| Physics | 3 | 4 |
| Geometry | 4 | |
| German | 5 | |
| Drill | | |
| | 21 | 4 = 25 hours |

SECOND SEMESTER

| Required: | | |
|---|---|---|
| English | 4 | |
| American History | 5 | |
| Physics | 3 | 4 |
| Geometry | 4 | |
| German | 5 | |
| Drill | | |
| | 21 | 4 = 25 hours |

## COURSE OF STUDY IN HOME ECONOMICS

### FIRST YEAR

#### FIRST SEMESTER

| | Recitation Hours | Laboratory Hours |
|---|---|---|
| Sewing | 3 | 6 |
| Wood Work | 1 | 2 |
| English | 4 | |
| Algebra | 4 | |
| Greek and Roman History | 2 | |
| Physiology and Hygiene | 3 | 2 |
| Physical Training | Three periods per week | |
| | 17 | 10 = 27 hours |

#### SECOND SEMESTER

| | | |
|---|---|---|
| Sewing | 3 | 6 |
| Wood Work | | 2 |
| English | 4 | |
| Algebra | 4 | |
| Greek and Roman History | 2 | |
| Physiology and Hygiene | 3 | 2 |
| Physical Training | Three periods per week | |
| | 16 | 10 = 26 hours |

### SECOND YEAR

#### FIRST SEMESTER

| | | |
|---|---|---|
| Cooking | 2 | 4 |
| House Practice | 1 | 2 |
| English | 3 | |
| Algebra | 3 | |
| Dairy | 2 | 2 |
| Horticulture | 2 | 2 |
| Chemistry | 3 | 3 |
| Physical Training | Three periods per week | |
| | 16 | 13 = 29 hours |

SECOND SEMESTER

| | Recitation Hours | Laboratory Hours |
|---|---|---|
| Cooking | 2 | 4 |
| House Practice | 1 | 2 |
| English | 3 | |
| Algebra | 3 | |
| Chemistry | 3 | 3 |
| Physical Training | Three periods per week | |
| | 12 | 10 = 22 hours |
| Elective: | | |
| Dairy | 2 | 2 |
| Horticulture | 2 | 2 |
| Geography, for Normal Course | 4 | |

NOTE—Students choose 8 hours of elective work.

## THIRD YEAR

FIRST SEMESTER

| | | |
|---|---|---|
| Advanced Cookery | 2 | 4 |
| House Practice | 1 | 2 |
| English | 4 | |
| American History | 3 | |
| Geometry | 2 | |
| Physics | 3 | 4 |
| Entomology | 2 | 2 |
| Physical Training | Three periods per week | |
| | 17 | 12 = 29 hours |

SECOND SEMESTER

| | | |
|---|---|---|
| Advanced Cookery | 3 | 6 |
| English | 4 | |
| American History | 3 | |
| Geometry | 2 | |
| Physics | 3 | 4 |
| Entomology | 2 | 2 |
| Physical Training | Three periods per week | |
| | 17 | 12 = 29 hours |

## THIRD YEAR

### Normal Training Group

FIRST SEMESTER

| | Recitation Hours | Laboratory Hours |
|---|---|---|
| Advanced Cookery | 2 | 4 |
| English | 4 | |
| American History | 3 | |
| Geometry | 2 | |
| Physics | 3 | 4 |
| Entomology (half semester), Stock Judging (half semester) | 2 | 2 |
| Physical Training | Three periods per week | |
| | 16 | 10 = 26 hours |

SECOND SEMESTER

| | | |
|---|---|---|
| Agricultural Education for Rural Schools | 3 | |
| Advanced Cookery | 2 | 4 |
| English | 4 | |
| American History | 3 | |
| Geometry | 2 | |
| Physics | 3 | 4 |
| Field Crops (half semester), Soils (half semester) | 2 | 2 |
| Physical Training | Three periods per week | |
| | 19 | 10 = 29 hours |

## FOURTH YEAR

FIRST SEMESTER

| | | |
|---|---|---|
| Household Art | 2 | 4 |
| Home Economics for Rural Schools | 1 | 2 |
| English | 4 | |
| Pedagogy | 3 | |
| Review of Five Essentials | 6 | |
| General Review of Common Branches | 3 | |
| | 19 | 6 = 25 hours |

SECOND SEMESTER

| | Recitation Hours | Laboratory Hours |
|---|---|---|
| Household Art | 2 | 4 |
| Home Economics for Rural Schools | 1 | 2 |
| English | 4 | |
| Pedagogy | 3 | |
| Review of Five Essentials | 6 | |
| General Review of Common Branches | 3 | |
| | 19 | 6 = 25 hours |

**Technical Group**

FIRST SEMESTER

| | | |
|---|---|---|
| Household Art | 3 | 6 |
| English | 4 | |
| Mathematics | 4 | |
| Botany | 3 | 2 |
| German | 5 | |
| | 19 | 8 = 27 hours |

SECOND SEMESTER

| | | |
|---|---|---|
| Household Art | 3 | 6 |
| English | 4 | |
| Mathematics | 4 | |
| Botany | 3 | 2 |
| German | 5 | |
| | 19 | 8 = 27 hours |

### University Preparatory Group

FIRST SEMESTER

| | Recitation Hours | Laboratory Hours | |
|---|---|---|---|
| Household Art | 3 | 6 | |
| English | 4 | | |
| Mathematics | 4 | | |
| Botany | 3 | 2 | |
| German | 5 | | |
| | 19 | 8 | = 27 hours |

SECOND SEMESTER

| | | | |
|---|---|---|---|
| Chemistry | 2 | 4 | |
| English | 4 | | |
| Mathematics | 4 | | |
| Botany | 3 | 2 | |
| German | 5 | | |
| | 18 | 6 | = 24 hours |

## COURSE OF STUDY IN HOME ECONOMICS

### For Graduates of One-Year High Schools

### SOPHOMORE YEAR

FIRST SEMESTER

| Required: | Recitation Hours | Laboratory Hours |
|---|---|---|
| Sewing | 3 | 6 |
| Wood Work | 1 | 2 |
| Dairy | 2 | 2 |
| Chemistry | 3 | 3 |
| Physiology and Hygiene | 3 | 2 |
| Physical Training | Three periods per week | |
| | 12 | 15 = 27 hours |

SECOND SEMESTER

| Required: | | |
|---|---|---|
| Sewing | 3 | 6 |
| Wood Work | 1 | 2 |
| English | 3 | |
| Chemistry | 3 | 3 |
| Physiology and Hygiene | 3 | 2 |
| Physical Training | Three periods per week | |
| | 13 | 13 = 26 hours |

### JUNIOR YEAR

FIRST SEMESTER

| Required: | | |
|---|---|---|
| Cooking | 2 | 4 |
| House Practice | 1 | 2 |
| Physics | 3 | 4 |
| Geometry | 2 | |
| English | 4 | |
| American History | 3 | |
| Physical Training | Three periods per week | |
| | 15 | 10 = 25 hours |

| Elective: | Recitation Hours | Laboratory Hours |
|---|---|---|
| Horticulture | 2 | 2 |
| Entomology | 2 | 2 |

Students choose one or both of the elective subjects.

SECOND SEMESTER

| Required: | | |
|---|---|---|
| Cooking | 2 | 4 |
| House Practice | 1 | 2 |
| Physics | 3 | 4 |
| Geometry | 2 | |
| English | 4 | |
| American History | 3 | |
| Physical Training | Three periods per week | |
| | 15 | 10 = 25 hours |

| Elective: | | |
|---|---|---|
| Horticulture | 2 | 2 |
| Entomology | 2 | 2 |
| Dairy | 2 | 2 |
| Geography for Normal Training | 4 | |

Students choose one or two of the elective subjects.

## SENIOR YEAR

### Technical Group

FIRST SEMESTER

| | | |
|---|---|---|
| Advanced Cookery | 2 | 4 |
| House Practice | 1 | 2 |
| English | 4 | |
| Household Art | 2 | 4 |
| Botany | 3 | 2 |
| German | 5 | |
| Physical Training | Three periods per week | |
| | 17 | 12 = 29 hours |

SECOND SEMESTER

| | Recitation Hours | Laboratory Hours |
|---|---|---|
| Advanced Cookery | 3 | 6 |
| English | 4 | |
| Household Art | 2 | 4 |
| Botany | 3 | 2 |
| German | 5 | |
| Physical Training | Three periods per week | |
| | 17 | 12 = 29 hours |

**University Preparatory Group**

FIRST SEMESTER

| | | |
|---|---|---|
| Advanced Cookery | 2 | 4 |
| Household Art | 2 | 4 |
| English | 4 | |
| Mathematics | 4 | |
| Botany | 3 | 2 |
| German | 5 | |
| Physical Training | Three periods per week | |
| | 20 | 10 = 30 hours |

SECOND SEMESTER

| | | |
|---|---|---|
| Chemistry | 2 | 4 |
| Advanced Cookery | 2 | 4 |
| English | 4 | |
| Mathematics | 4 | |
| Botany | 3 | 2 |
| German | 5 | |
| Physical Training | Three periods per week | |
| | 20 | 10 = 30 hours |

## COURSE OF STUDY IN HOME ECONOMICS

### For Graduates of Two-Year High Schools

### JUNIOR YEAR

#### FIRST SEMESTER

| Required: | Recitation Hours | Laboratory Hours |
|---|---|---|
| Sewing or Cooking and House Practice... | 3 | 6 |
| American History | 3 | |
| Physiology and Hygiene | 2 | 2 |
| Chemistry | 3 | 3 |
| Physical Training | Three periods per week | |
| | 11 | 11 = 22 hours |
| Elective: | | |
| Wood Work | 1 | 2 |
| Cooking and House Practice or Sewing... | 3 | 6 |
| Dairy | 2 | 2 |
| Horticulture | 2 | 2 |

#### SECOND SEMESTER

| Required: | | |
|---|---|---|
| Sewing or Cooking and House Practice... | 3 | 6 |
| American History | 3 | |
| Physiology and Hygiene | 2 | 2 |
| Chemistry | 3 | 3 |
| Physical Training | Three periods per week | |
| | 11 | 11 = 22 hours |
| Elective: | | |
| Wood Work | | 2 |
| Cooking and House Practice or Sewing... | 3 | 6 |
| Dairy | 2 | 2 |
| Horticulture | 2 | 2 |

Students choose from electives not less than 4 hours nor more than 9 hours.

## SENIOR YEAR

### Technical Group

FIRST SEMESTER

| Required: | Recitation Hours | Laboratory Hours |
|---|---|---|
| English | 4 | |
| Botany | 2 | 2 |
| Physics | 3 | 4 |
| Advanced Cookery and House Practice | 3 | 6 |
| Physical Training | Three periods per week | |
| | 12 | 12 = 24 hours |
| Elective: | | |
| Entomology | 2 | 2 |
| Household Art | 2 | 4 |
| German | 5 | |

SECOND SEMESTER

| Required: | | |
|---|---|---|
| English | 4 | |
| Botany | 2 | 2 |
| Physics | 3 | 4 |
| Cooking or Sewing | 3 | 6 |
| Physical Training | Three periods per week | |
| | 12 | 12 = 24 hours |
| Elective: | | |
| Entomology | 2 | 2 |
| Advanced Cookery and House Practice | 2 | 4 |
| German | 5 | |

Students choose from electives not less than 4 hours nor more than 6 hours.

### University Preparatory Group

FIRST SEMESTER

| | Recitation Hours | Laboratory Hours |
|---|---|---|
| Advanced Cookery or Household Art | 2 | 4 |
| English | 4 | |
| Mathematics | 4 | |
| Botany | 2 | 2 |
| German | 5 | |
| Physical Training | Three periods per week | |
| | 17 | 6 = 23 hours |

SECOND SEMESTER

| | | |
|---|---|---|
| Chemistry | 2 | 4 |
| Advanced Cookery and Household Art | 2 | 4 |
| English | 4 | |
| Mathematics | 4 | |
| Botany | 2 | 2 |
| German | 5 | |
| Physical Training | Three periods per week | |
| | 19 | 10 = 29 hours |

NOTE—Two years of work in one line of Home Economics are required in this course. The student *may* obtain two years of Cookery and two years of Sewing by the use of electives.

## COURSES OF INSTRUCTION

### AGRICULTURAL BOTANY

Head Professor Wilcox, Assistant Professor Link, Instructor Rusk

Instruction in this department is given during the second and fourth years of the course. The aim is to make the instruction valuable alike to those who contemplate entering one of the four-year courses in the College of Agriculture and to those who expect to return to the farm. Considerable emphasis is placed upon the economic phases of the subject and yet this feature is not permitted to interfere with the proper presentation of the science of botany. The laboratory is equipped with microscopes and other necessary apparatus. A portion of the greenhouse is especially arranged and equipped for the experimental work in plant physiology and pathology. Important additions have also been made to our charts and literature available for the use of students.

A. **Elementary Agricultural Botany**—A general introduction to the science of botany. Students will become acquainted with the general morphology of the flowering plants. Accompanied by laboratory studies of the structure and activities of the plant cell and the principal tissues. Three hours lecture. Two hours laboratory. For men and women. First semester.

B. **Elementary Agricultural Botany**—Elementary study of types of plants selected as far as possible with reference to their economic value in agriculture. Three hours lecture. Two hours laboratory. For men and women. Second semester.

C. **Elementary Plant Physiology**—An elementary study of the growth, nutrition, irritability and reproduction of plants with special reference to the application of these facts to plant culture. Two hours lecture. Two hours laboratory. First semester.

D. **Elementary Plant Pathology**—An elementary study of the more common diseases of cultivated plants; the best methods of controlling these by spraying, proper methods of cultivation, use of resistant varieties, etc., will be discussed. Two hours lecture. Two hours laboratory. Second semester.

## AGRICULTURAL CHEMISTRY

Professor Upson, Assistant Professor Plum

Two courses are offered in this Department, A and B, both of which are required of all students for graduation.

A. **Elementary Chemistry**—This is a course in general chemistry which gives special attention to the fundamental principles of the science. Topics closely related to agriculture are emphasized. In the laboratory, the students become acquainted with laboratory manipulation and prepare and experiment with many of the elements and compounds dealt with in the class. The non-metallic elements are covered. Three hours recitation. Three hours laboratory. First semester.

B. **Elementary Chemistry**—Continuation of Course A. The Chemistry of the metallic elements. Three hours recitation. Three hours laboratory. Second semester.

## AGRICULTURAL ENGINEERING

Head Professor Chase, Assistant Professor Seaton, Adjunct Professor Baer, Mr. Wood, Mr. Brackett, Mr. Moore

## MANUAL TRAINING

The object of Manual Training is to combine a training of the hand and eye with a development of the mental powers.

The **Course in Wood Work** makes the student familiar with the use and care of tools and gives him the theory of and practice of building and construction work. To aid in developing the student a series of exercises is offered such as marking, sawing, planing, chiseling, splicing, mortising, tenoning, and door paneling. When proficient in the above, the student is given more advanced work; making sawhorses, ladders, wagon boxes, work benches, tanks, rafters, roof trusses and model barns, houses, and other farm buildings.

The Wood Shop with its accessories occupies the whole of the second floor of Machinery Hall. Besides the main workroom, there is an office for the instructor, a stock room for lumber, and a tool room. In the main work room there are forty conveniently designed work-benches, each equipped with a quick acting vise, a complete kit of carpenter tools and four lockers. There is also in this room a combined power rip and cross cut saw, a grindstone and a turning lathe. The tool room is equipped with

special tools for the construction of buildings, wagons, etc., and all supplies and records are kept here.

**The work for girls** in this department begins with some of the simpler exercises in which they are instructed in the use of tools, especially sawing, planing, squaring, and the use of the hammer. Special attention is given to the construction of small articles of furniture, cabinet work, planning the home, designing and decorating, interior and exterior finishing, including painting, varnishing and frescoing. Accompanying this, lectures will be given pertaining to the selecting of woods for interior finish, interior designs, care of wood-work, walls, etc.

**The Forge Shop** is commodious, well lighted and well arranged. Thirty students are given instruction in this line of work at the same time.

Forges are of the hand blower type and the smoke is removed from the room by means of a large power driven exhaust fan. Besides the regular set of forge tools at each anvil, there are tool racks containing such extra tools as swages, fullers, cutters, headers, flatters, set hammers, etc.

The shop is well equipped with such general equipment as benches, vises, post drills, emery grinder, and buffer, shear, tire shrinker, machine lathe, and other special tools which the course and general shop practice demand.

The course offered is such as will be especially practical for the student who expects to return to the farm. The student is required to complete a set of exercises which have been prepared, each being indicative of some operation which is common to the repair shop and at the same time each exercise consisting of the making of some useful article as far as practical.

Each laboratory period of three hours is preceded by a one hour period of demonstration work. At the demonstration period, the instructor goes over each exercise and points out the difficulties which will be encountered and how to avoid them.

In connection with this demonstrative lecture, information is furnished the student regarding fuels, iron and steel materials, forging and welding iron and steel, shop arrangement, shop equipment and machinery repairs.

After the completion of the outlined course of exercises which includes such operations as drawing, squaring, upsetting, bending, pointing, twisting, tempering and annealing, the student is then given special material—plow work, horse-shoeing, soldering, brazing, babbiting and pipe fitting.

The study of **farm machinery** in our schools and colleges is practically new, and, until it has become thoroughly organized, is subject to some criticism. Where the outlay for farm machinery by each farmer is so great he should learn to buy with intelligence without depending upon the dealer.

To equip the laboratory in this work, machinery of the most up-to-date type has been loaned by the various manufacturers. Not only is the machinery floor equipped with various types of standard machinery, but with machines designed for special purposes. The following is a brief outline of the work: setting up and tearing down machines, studying the different types of tillage machinery, calibrating drills and seeders, testing planters for accuracy of drop, testing and determining the efficiency of pumps, studying and testing windmills, studying and testing gasoline engines, studying and testing traction engines, determining the draft of plows, drill seeders, binders, etc. To make tests, calibrations, etc., such apparatus is used as can be easily prepared on any farm. In connection with the laboratory work a series of lectures is given on the selection, care, use and design of tools.

**Rural Architecture**—There is a tendency toward better and more permanent farm buildings in Nebraska. The farm house is changing from the cheap and temporary structure to the modern and often permanent home such as is found in the East. Barns, silos, granaries and fences are now commonly constructed in whole, or in part, of some form of masonry. Such equipment is not easily changed if a mistake is made in its design.

The course in Rural Architecture is given to train students in the design of farm buildings and their arrangement in the farmstead plan.

Lectures are given on heating, lighting, ventilation, sewerage, etc. Laboratories are provided for practical work with cement. The student is instructed in tile making, block making, floor building and concrete form work.

About five dollars will need to be invested in a set of drawing instruments and a board. These will be found of value in solving problems relating to the farm after the student returns home.

A. **Wood Work**—Practice with the care, use and adjustment of tools. Exercises in bench work. One hour attendance. Three hours laboratory. First semester.

B. **Wood Work**—Farm building construction. Prerequisite: Course A. One hour attendance. Three hours laboratory. Second semester.

C. **Forge Work**—Practice in forging, welding, tempering, pipe fitting, babbitting, and repairing of machinery. One hour attendance. Three hours laboratory. First semester.

D. **Forge Work**—Continuation of course C. Prerequisite: Course C. One hour attendance. Three hours laboratory. Second semester.

E. **Farm Machinery**—A study of all lines of agricultural implements, tillage, grading, seeding, harvesting, pumping, and fertilizing machinery. One hour attendance. Three hours laboratory. First and second semesters.

F. **Farm Motors**—Continuation of course E, with the addition of work with windmills, steam boilers, steam engines, gasoline engines, and traction engines. The determination of brake horse power and other tests in farm motors. One hour attendance. Three hours laboratory. First and second semesters.

G. **Rural Architecture**—The elementary study of farm buildings and equipment, fences, sewerage, heating, lighting, etc. Practice at drawing, designing and practical cement work. One hour attendance. Three hours laboratory. First semester.

H. **Rural Architecture**—Continuation of G. One hour attendance. Two hours laboratory. Second semester.

I. **Wood Work and Finishing** (Girls)—Practice with use, care, and adjustment of tools. Interior construction. Painting, oiling, and staining of woods. One hour attendance. Two hours practice. First semester.

J. **Wood Work and Finishing** (Girls)—Continuation of course L. One hour attendance. Two hours practice. Second semester.

K. **Automobiles**—A study of general design, with a detailed study of engines, ignitors, starters, carburetors, transmissions, differentials and tires. Practice in repairing and overhauling with demonstrations in operation. Two hours attendance with preparation. Three hours laboratory. First semester.

L. **Automobiles**—A continuation of course K. Two hours attendance with preparation. Three hours laboratory. Second semester.

## AGRONOMY

Professor Barker, Assistant Professor Hopt, Assistant Professor Young and Assistants

**Field Crops.** The department is supplied with a well equipped lecture-room, seating one hundred fifty students; two grain laboratories, having seating capacity and working facilities for one hundred students; necessary apparatus for weighing, measuring, and testing grains; material for laboratory use and demonstrational purposes, consisting of cereals, forage grasses, legumes and miscellaneous crops in head and threshed form, showing species, types and varieties.

A. **Crop Management**—A study of the every day problems in field crops management. Classification and characteristics of the various field crops. Type and variety, choice selection, harvesting, care and testing of seed. Adulteration and dangerous impurities in seed subject to same. Time, rate, depth and method of seeding; time, frequency, depth and manner of cultivation. Time and method of harvesting. Profitable disposal.

The three great, profitable Nebraska crops—corn, wheat and alfalfa, each representative of a special type of field crops, are taken up with special thoroughness. Other crops such as the cereals—oats, barley, rye, milo and other non-saccharine sorghums, and the forage crops—legumes, perennial grasses, millets and non-saccharine sorghums receive due attention. Minor crops such as broom-corn, flax, sweet clover and sand vetch are discussed briefly. Required of second year students. Three hours attendance. First semester.

B. **Crop Management**—A continued. Second semester.

C. **Crop Laboratory**—Crop management in the form of laboratory practice. The simpler and more common matters of field crops practice. Adaptation study for Nebraska conditions of the various species, types and varieties of our familiar field crops. Identification of the above crops whether in the plant, fruit or seed form. Special identification study of the more generally grown forage grasses and the small-seeded legumes. Detection and identification of impurities, especially the seeds of common or dangerous weeds. Practice in selecting, caring for and testing seed so that pure, viable seed adapted to requirements and of high yielding power may be had. Study of seed catalogues and seedmen's methods. Principles by which good seed may be purchased. Judging and commercial grading of the cereals. Practice in identification and methods of control of especially troublesome fungus, weed and animal enemies of field crops. Computing the contents of cribs, bins and stacks and the acreage of fields of peculiar shape. Germination studies. Legume inoculation. Required of second year students along with course A. Four hours laboratory. First semester.

D. **Crop Laboratory**—C continued. To be taken with course B. Second semester.

E. **Advanced Crop Laboratory** (with Special Lectures)—Along the same general lines as courses C and D, except that it is less elementary. Of special interest to the following students: (1) Those who are primarily interested in the agronomical side of farm work. (2) Those who wish to raise seed for others as well as themselves. (3) Those who feel the need of developing new strains of crops or systems of crop management to meet

peculiar local conditions. Optional to fourth year students. Two hours laboratory. First semester.

F. **Advanced Crop Laboratory**—E continued. Second semester.

**Soils.** Instruction in soils is given during the third and fourth years of the course. The courses given during the third year are required of all male students in the School, while those offered during the Senior year are elective and may be taken by all students who have credits for the third year's work in soils. The work is general and practical. It is designed to inculcate the principles and practices of soil management. Special attention is given to Nebraska soil areas, climates, soil types found therein, and economic management of the lands thereon.

**Soil Lecture and Text-Book.** (1) Properties of soils; origin, deposition and natural transportation of soils; physical and chemical constitution of soils and subsoils; the function of humus, relation of the plant to plant food material in the soil; available and unavailable fertility, nitrification, accretion of nitrogen through leguminous crops; arrangement of soil particles; influence of the size of soil particles upon the rate of solution of plant food materials; forms in which water exists in soils, its movements in soil; evaporation from the soil; movement of air in soils; composition and action of soil air; relation of the soil to heat; reasons for tillage. (2) Management of soils; plowing—manner, time, depth, frequency, for what crops; subsurface packing—description, time, when useful; harrowing—time, methods, frequency; cultivating—methods, time, depth, frequency, rolling and floating—methods, time, occasions; crop rotation; effect of perennial forage crops; use of barnyard manure, green manure and commercial fertilizers.

**Soil Laboratory Practice.** Microscopic examination of soil to ascertain sizes and shapes of soil particles; soil as distinguished from pulverized rock; effect of water on soil temperatures; effect of drainage on soil temperature; effect of soil drainage upon plant growth; effect of moisture upon the volume of soils; power of loose soils to retain water; power of compact soils to retain water; power of humus to retain moisture; rate of percolation of water through soils; rise of capillary water in soils; effect of mulches on evaporation of water from soils; rate of movement of air through soils; effect of lime on soils; effect of alkali on soils; flocculation of clay; power of water-free soils to absorb moisture from the air; fixation of certain substances by soil; effect upon plant growth of plant food material in the soil; amount of soil moisture required for plant growth; deter-

minations of volume, weight, apparent specific gravity, and porosity of soils.

The following are the various soil courses which are given in the school:

G. **Farm Soils**—A general elementary course in the study of Soils from the viewpoint of crop production.

Origin, formation, classification; chemical and physical properties of surface soils and subsoils; organic and inorganic constituents; organic matter, humus, nitrogen and their immediate importance to economic crop production; Soil water—functions, crop requirements, forms, availability, movements and control; land drainage; micro organisms—functions, distribution, conditions for development, nitrification, symbiotic and non-symbiotic bacteria aerobic and anaerobic organisms; soil air; soil temperature; tillage-implements, methods, kinds, functions; soil areas including Nebraska soils—their climate especially rainfall and temperature, soils, crop production, and economic management; arid, semi-arid and humid regions; acid and alkali soils—their location, cause and remedies; wind and water erosion; farm manures, crop residues; commercial fertilizers; crop rotations; Nebraska soil problems. Two hours attendance. First semester.

H. **Farm Soils**—G continued. Second semester.

I. **Soil Laboratory**—Microscopic examination of soils to ascertain sizes, shapes, colors and structure of soil particles; soil as distinguished from pulverized rock; soil temperatures—surface soils and subsoils, drained and undrained soils, variously exposed land slopes; effect of drainage upon plant growth; effect of water upon the volume of soils; power of loose and compact soils and organic matter to retain water; percolation of water through soils; rise of capillary water in soils; effect of mulches on evaporation of soil water; movement of air through soils; effect of lime and alkali on soils; flocculation of clay; power of soils to absorb moisture from the air; fixative power of soils; effect of plant food materials in the soil upon plant growth; determinations of volume, weight, apparent specific gravity and porosity of soils; soil regions and geologic formations of Nebraska. To be taken with G. Two hours laboratory. First semester.

J. **Soil Laboratory**—I continued. To be taken with H. Second semester.

K. **Principles of Soil Management**—Soil as a medium for crop growth, soil moisture, plant food, air and temperature of the soil; farm manures, drainage, liming alkali soils. Designed for those who wish to

elect more soil work in the senior year than that given in courses G, H, I, and J. Two hours attendance. First semester.

L. **Principles of Soil Management**—K continued. Second semester.

M. **Soil Laboratory**—Advanced work in soil physics. Designed for students who wish a more thorough knowledge of soils than that gained in the work of the Junior year. Two hours laboratory. First semester.

N. **Soil Laboratory**—M continued. Second semester.

O. **The Teaching of Agronomy**—A special course designed for students of the School of Agriculture electing the Normal Training Group. Elements of Agronomy. Pedagogical training in the clear presentation of Agronomic principles. Simple, practical lessons in soils and field crops which are feasible to use in the average rural school or high school. Two hours recitation. Two hours laboratory. Second semester.

## AMERICAN HISTORY

Miss Denny

The purpose of this course is to inspire young men and women with ideals of good citizenship, as well as to give them a knowledge of the foundation and growth of our nation. The training of young men and women for useful lives on the farm is sadly deficient if only the monetary side of life is emphasized. This course is intended therefore to bring to Nebraska boys and girls the best there has been and is in American life. It is required of all fourth year students.

### COURSES

A.—Discovery of America; causes and results. Political and economic condition of European nations. Early French, Spanish, and English explorations and settlement in America. Colonial period; struggles and development. French and Indian Wars. English authority resented; the Revolution. Critical period and establishment of national and state governments. Three hours attendance. First semester.

B.—Difficulties of early administrators. Louisiana purchase. Foreign affairs and war of 1812. Agitation over slavery. Missouri compromise. Monroe doctrine. Annexation of Texas. War with Mexico. Development of national resources. State sovereignty. Civil War; reconstruction period. Purchase of Alaska. War with Spain. Three hours attendance. Second semester.

## ANCIENT HISTORY

Miss Denny

A. **Greek History**—Survey of oriental history. Source work from Homer and Herodotus. Outline and discussion of Greek History, beginning with Geography and Colonization, including the Persian and Peloponnesian Wars, and closing with the supremacy of Thebes. Two hours attendance. First semester.

B. **Roman History**—A study of Alexander's Empire and the Graeco-Oriental World. This is followed by the early settlement of Italy. Formation of laws, and establishment of Roman Empire, invasion of barbarians and Charlemagne's Empire. Two hours attendance. Second semester.

## ANIMAL HUSBANDRY

Professor Bliss, Associate Professor Lee, Associate Professor Gramlich, *Adjunct Professor Carpenter, Instructors and Assistants

**Breeds of Live Stock.** All of the principal breeds of cattle, horses, sheep and swine are considered. Each breed is taken up separately and as much time devoted to it as the importance of the breed justifies. The general plan of the work is to establish the origin of the breed, to trace the development and, last of all, to make a careful study of its characteristics, adaptation and usefulness under various conditions. The study of breeds in the class room is accompanied by comparing and judging specimens of all the breeds of live stock which are adapted to this section of the country. The object of this work is to familiarize the student with their characteristics and general usefulness that he may thereby be better prepared to choose more judiciously among them when he has occasion to do so.

**Principles of Breeding.** The work in the "Principles of Breeding" is very closely related to the study of breeds. In tracing the development of the various breeds the methods employed by the breeders in forming these breeds are studied with a view to ascertaining the means by which they achieved success. Methods employed by the master breeders are, for the most part, worthy of imitation. Through long experience and observation many well-established principles and laws have been formulated, the observance of which is essential to successful breeding. Such are the laws of

*Deceased.

heredity, the laws of variation, the laws of atavism, the law of correlation of parts, etc. In addition to such things as in-and-in breeding, line-breeding, cross breeding, grading up common stock, mating, reading and writing pedigrees, etc., are given as much attention as time permits. Attention is also given to the practical phases of stock breeding, such as herd management, feeding breeding stock, selection of breeding animals, buying and selling and exhibiting at stock shows.

**Judging Live Stock.** The course in judging live stock consists of demonstrations by the lecturer and practice by the students in judging animal conformation. The aim is to give the student the proper conception of the desirable types in all farm animals, types that prove most profitable to feed and put on the market. The profits from feeding animals are greatly enhanced by a knowledge of what constitutes good type and good feeding capacity. The work in cattle, for example, begins with the judging of fat steers ready for the block. The student learns what sort of an animal is most in demand by the buyers of fat cattle and what kind of an animal is capable of producing the largest gains in the feed lot. He learns to associate particular conformation or shape with both killing and feeding qualities. Once he has learned the desirable form of the steer finished for the market, he is next given work in the judging of feeder steers and breeding cattle. A great deal of emphasis is placed upon the judging of young bulls in order that the prospective farmer may be able to make a judicious selection of a sire for his herd of cattle, whether grade or pure-bred. A knowledge of what constitutes profitable type is of the utmost value to one engaged in breeding and feeding cattle for market. The University maintains individual specimens representing all the leading breeds of live stock for judging. The steers fed by the University which make each year such a favorable showing at the International Live Stock Exposition are used for class room illustration. No exhibitor in the country has excelled the record of the University of Nebraska in the exhibit of fat cattle. The showing of these animals is only secondary to their use in the student judging work.

**Feeding Live Stock.** The work in stock feeding begins by a study of the various foods which are at the feeder's disposal in the making of beef, pork, mutton and milk. These foods are studied with reference to their composition, digestibility and physical texture. Attention is also given to the physiological processes in digestion and assimilation. Practice in compounding rations gives the student ability to put together a mixture of foods which proves most profitable to feed. The best methods of feeding

each and every class of farm animals are taken up in detail in a logical manner. Each class of animals must be fed differently. Young animals of a certain class require a different procedure than older and more mature animals. All such matters are given due consideration, the whole aim being to so equip the student with a general knowledge of foods and animal nutrition as to enable him to feed live stock most profitably.

COURSES

A. **Judging Live Stock**—Practice with the score card. Competitive judging of market types and classes, by ages, of cattle, sheep, and swine. Selecting animals for feeding purposes. Also judging meat and carcasses. Four hours laboratory. First semester.

B. **Judging Live Stock**—Judging of breeds of horses, cattle, sheep, and swine by comparative methods. Special attention given to breed type and breed characteristics of animals. Four hours laboratory. Second semester.

D. **Breeds of Live Stock**—History of different breeds of live stock; methods of development of breeds; characteristics and adaptability of improved breeds. Four hours attendance. Second semester.

F. **Feeding Animals**—Elementary live stock feeding; methods of feeding all classes of farm animals; the compounding of rations. Four hours attendance. Second semester.

H. **Judging Live Stock**—Advanced course for third year students. Prerequisite: Courses A and C. Four hours laboratory. Second semester.

I. **Principles of Animal Breeding**—Elective. An elementary study of fundamental principles of reproduction, heredity, variation, selection, and prepotency; also a consideration of practical problems in animal breeding. Two hours attendance. First semester.

J. **Principles of Animal Breeding**—Continuation of I. Two hours attendance. Second semester.

K. **Judging Live Stock**—A comparative study of the different breeds of cattle, horses, sheep and hogs. This course is given to girls who have registered in the Normal Training course with the intention of becoming teachers in the rural schools. Last six weeks of the first semester. Four hours attendance.

## ANIMAL PATHOLOGY

Professor Gain, Associate Professor Sturdevant

**Anatomy and Physiology of Farm Animals.** Taught by lectures, text-books, recitations, charts, models, and dissection, together with some microscopic work. Charts and models are the latest produced, many of them being imported from Germany. The microscope is used to study various tissues and body fluids. Dissection is mostly on the dog or the cat, with occasional demonstration of dissection on the horse and the ox. The greater portion of the time is spent on digestion and the digestive system. Absorption is next considered. Circulation is also studied quite fully. Other portions of the subject, being less important in Agriculture, are given less attention.

**Diseases of Farm Animals** takes up the cause and prevention of digestive troubles, prevention of the loss of young animals due to navel infection, and emergency treatment. The teeth are studied with reference to their structure and dentition with a view of determining the age of animals by their teeth, and also as to their being a factor in bringing about indigestion. Emergency surgery is also taken up and methods of controlling hemorrhage and first aid to wire cuts studied.

**Contagious Diseases** are studied the second semester with reference to the best methods of stamping out tuberculosis, hog cholera, etc. Students learn that it is profitable to employ only the best qualified veterinarian and are able to co-operate with him intelligently in eradicating any of the various contagious diseases he may have to contend with. Investigation has shown that 35 per cent of the draft stallions in this state over four years old are unsound, and for this reason the subject of soundness is studied to a considerable extent, with a view of bringing about the selection of only sound sires. Students are taught also how to splice ropes, make rope halters and tie all of the different knots and ties that would be met with in using ropes on the farm or ranch.

COURSES

A. **Anatomy and Physiology**—Study of skeletons of horse and cow. Anatomy of digestive system and physiology of digestion. Circulatory system and study of blood. Two hours attendance. First semester.

B. **Anatomy and Physiology**—Respiration. The nervous system. The senses. The foot. Generation and development. Two hours attendance. Second semester.

C. **Diseases of Farm Animals**—Hereditary diseases. Diseases of respiratory system. Prevention of digestive diseases. Minor emergency surgery. Prerequisite: Anatomy and Physiology A and B. Three hours attendance. First semester.

D. **Diseases of Farm Animals**—Contagious diseases. Hygiene and Farm Sanitation. Three hours attendance. Second semester.

E. **Elements of Physiology**—Bones of skeleton. Digestion. The circulatory system. Respiration. The senses. Drugs and stimulants. Two hours attendance. First semester.

F. **Hygiene and Sanitation**—Personal hygiene. Domestic hygiene. Ventilation and water supply. Public hygiene. Two hours attendance. Second semester.

(Courses E and F offered in the course for women.)

## DAIRY HUSBANDRY

Head Professor Frandsen, Adjunct Professor Woodward, Instructors Jensen and Markham

Instruction in this department covers all phases of modern dairying from the selection and feeding of the dairy cow to the manufacturing of butter, cheese and ice cream. The following courses are offered:

A. **Elements of Dairying**—The object of this course is to give such fundamental training in dairying as will be of practical value to the student and at the same time prepare him for more thorough work in the dairy courses which follow. This course will deal with the characteristics and composition of milk, factors influencing the amount and composition of milk, physiology of milk secretion, breeds of dairy cattle, testing of milk and cream by the Babcock method, cream separation, cream ripening, principles of buttermaking and dairy sanitation. Two hours lecture. Four hours laboratory. First semester, first year.

B. **Milk Production**—The object of this course is to give practical instruction regarding the dairy cow on the farm, including adaptation of breeds, selection of breeds for various purposes, selection of individual cows by type and by butter fat records; feeding and care of cows for economical milk production. In this course some attention will also be given to testing of milk and cream. The Ayrshires, Holsteins, Guerneys and Jerseys of the College herd are used in demonstrating work in this course. Two hours lecture. Four hours laboratory. First semester, third year.

C. **Farm Dairying**—Includes lectures on milk secretion and milk testing. Composition of dairy products, separation and acidity of milk. The preparation of starters and ripening of cream, churning and packing butter. Two hours lecture. Two hours laboratory. Second semester, third year.

D. **Domestic Dairying**—This course is especially arranged for students in Home Economics. The object of the course is to give the student some practical as well as scientific knowledge concerning the care and preparation of dairy products for food purposes. The work in this course includes lectures and laboratory work on the composition, chemical and physical properties and food value of milk and other dairy products; care of milk and cream on the farm and in the home; testing for fat, acidity, adulteration, preservatives and purity of dairy products. Some work is also given in the manufacture of butter, cheese and ice cream. Two hours lecture and two hours laboratory. Required, first semester, junior year.

E. **Domestic Dairying**—A continuation of Domestic Dairying D. In this course the production of sanitary milk and the manufacture of dairy products are considered more in detail. Two hours lecture and two hours laboratory. Prerequisite Elementary Dairying or Domestic Dairying D. Elective, second semester, junior year.

The buildings provided for the dairy work are well equipped. The butter-making, separating and milk testing laboratories, located in Dairy Hall, are well constructed for practical work. The stock judging is done in the dairy pavilion, a large room provided with elevated seats and cement floor, so that the animals may be brought in for class work. The dairy barn provides room for the housing of the leading dairy breeds of cattle and for the storing of feed. The cow stalls are of iron and the floors of cement, and carriers are provided for removing the manure. Two silos are connected with the barn and all the improved methods for feeding are in use. It is the aim of the department to give the students taking this course a thorough and practical knowledge of Western dairying, thus better fitting them for a profitable pursuit of this industry.

## ECONOMICS

Assistant Professor Martin

A. **Principals of Political Economy**—The history and evolution of economic society followed by a discussion of the consumption, production, exchange, and distribution of wealth. In connection with these subjects,

illustrative economic problems are treated, such as pertaining to monopoly, money and banking, protection and free-trade, land-rent, labor, transportation, taxation, and insurance. Two hours attendance. First semester.

B. **Principles of Political Economy**—A continued. Second semester.

## ENGLISH

Adjunct Professor Bullock, Miss Burritt, Miss Hooton

The work in English is required of all regular students, and continues through the four years. The purpose of the course is to give instruction and drill in the use of correct forms in writing and speaking. The principles of correct, clear, straightforward expression are emphasized in lectures and criticisms of themes. In the senior year practice is given in writing articles for agricultural journals and other papers. Studies of the best literature are carried on in connection with the work in composition.

### COURSES

A. **Review of English Grammar**—Oral and written spelling; theme writing, selected readings. Four hours attendance. First semester. First year.

B.—Course A continued. Four hours attendance. Second semester.

C. **Principles of Rhetoric**—Paragraph writing; selective readings made the basis of written work. Three hours attendance. First semester. Second year.

D.—Course C continued. Three hours attendance. Second semester.

E. **Exposition and Argumentation**—Studies of the speeches of Burke, Webster, and other masters; practical themes on agricultural topics. Third year. Two hours attendance for men. Four hours attendance for women. First semester.

F.—Course E continued. Two hours attendance for men. Four hours attendance for women. Second semester.

G. **Argumentation and Public Speaking**—Writing of articles for newspapers and agricultural periodicals; selected readings, final review. Four hours attendance. First semester. Fourth year.

H.—Course G continued. Four hours attendance. Second semester.

## ENTOMOLOGY

Associate Professor Swenk, Mr. Dawson

Instruction in this department is given to both men and women during the third year of their course. In both courses two lectures are given each week, with frequent quizzes interpolated. One period of laboratory work is given each week and this is supplemented by class room demonstrations, illustration by means of the steropticon and charts, and assigned readings on special topics. The courses aim to present a general but concise idea of the more practical aspects of the subject, including not only the remedies for and methods of prevention of the attacks of insects, but also a sufficiently broad understanding of the underlying facts concerning their life-histories and habits as is necessary for an intelligent conception of the reasons for the desirability of the recommended modes of procedure. The department is now equipped with one of the best libraries on economic entomology in the West, and both this and the insectary and its apparatus are at the service of the interested and inquiring student.

### COURSES FOR MEN

A. **Elementary Entomology**—This course begins with a study of the scope of entomology and its importance as an agricultural science, after which in a brief and untechnical way the essential facts of the structure, physiology, transformations and classification of insects are discussed. The twenty-three orders of insects are considered in turn, and while the relation of the various members of these orders to agriculture is especially emphasized throughout, enough of the structure and character of the various groups is considered to enable the student to recognize most of the common insects he is liable to meet on the farm. Two hours lecture. Two hours laboratory. First semester.

B. **Elementary Economic Entomology**—In this course the principal injurious insect enemies of field and garden crops are first considered, followed by a similar consideration of the most injurious orchard and live stock pests found in the state. The appearance of the pest, its method of attack, the effect of this attack and means of preventing it, and the standard remedies are discussed in detail together with approved formulas for preparing and methods of applying the various insecticides, and methods of fumigation for stored grain pests. In these lectures the more important pests, such as the chinch-bug, Hessian fly, army-worm, codling moth, etc., receive special lectures. Other special lectures are given on the role of

insects as transmitters of diseases of man and the domestic animals and on the relation of our native mammals and birds to agriculture. Two hours lecture. Two hours laboratory. Second semester.

COURSES FOR WOMEN

C. **Elementary Household Entomology**—This course for women is of a general and elementary character much like that given the men and involving a consideration of the orders of insects, but laying special stress upon the insect forms harmful or obnoxious in the household. Two hours lecture. Two hours laboratory. First semester.

D. **Household Entomology**—A specific study of the more important household pests. The relation of mosquitoes, house flies, and fleas to human health form the subject of special studies, while the lice, mites, ticks, bed-bugs, gnats, bot-flies and other parasites of man and the domestic animals are also dealt with. Such insects as cockroaches and house crickets, house ants, silver-fish, clothes moths, carpet beetles, cheese mites, larder beetles, flour beetles, meal worms and others which are pests of the household are thoroughly studied. Two hours lecture. Two hours laboratory. Second semester.

E. **Brief Course in Household Entomology**—This is a course of twenty lectures designed especially for the students in the Normal Training Group of the course in Home Economics who cannot take the regular courses C and D. It emphasizes particularly the elements of the science and the control of the principal household pests. First half of first semester. Two hours attendance. Two hours laboratory.

## FARM MANAGEMENT

Head Professor Pugsley, Assistant Professor Filley

This department deals with the problems which confront every farmer in the management of his own farm. Particular emphasis is placed upon the farm as a business investment. Methods which practical farmers have found successful are discussed. Problems of co-operation and marketing are treated as fully as time permits.

Farm documents and farm accounts receive consideration during the second semester. The courses are based upon actual farm and business practice.

COURSES

A. **Farm Management**—This course is a study of the principles underlying farm management. It covers such problems as the proportion of capital which can be wisely invested in land, buildings, and equipment; what type of farming is best adapted to each student's conditions; the labor problem; should a farmer own or rent; the farm implement problem; how to choose a farm; cooperation; marketing problems; and farm advertising. Crop rotations for Nebraska, and their effect upon soil productivity receive considerable attention. Each student arranges a rotation that is suitable for his home locality, and plans how it will work out with reference to some particular farm. Three hours attendance. First semester.

B. **Farm Documents and Farm Accounts**—This is a continuation of course A, and deals largely with farm accounting and legal papers. The advantages of keeping a simple and practical system of farm accounts will discussed, and students will be given actual practice work with a system which in its fundamental form is used today by many successful farmers. Legal papers with which the farmer should have a working knowledge, such as deeds, mortgages, leases and negotiable instruments will receive consideration. Some time will be devoted to those phases of rural law bearing most directly upon farm management problems. Three hours attendance. Second semester.

## FORESTRY

Professor Morrill

A. **Farm Forestry**—(Elective)—Relation of Forestry to Agriculture. A study of the species best adapted for planting in different regions of Nebraska for wind-breaks, shelter-belts and forest plantations; methods of propagation, planting and protection; fence post trees and the use of preservatives. Two hours attendance. Four hours library and field work. First semester.

## GERMAN

Miss Denny

A. **Beginning**—For women. Grammar and exercises with easy readings. Sentence structure and vocabulary. Five hours attendance. First semester.

B. **Beginning**—A continued. Bacon's "Im Vaterland" and short poems. Five hours attendance. Second semester.

A. For men. Grammar and exercises with easy readings. Sentence structure and vocabulary. Three hours attendance. First semester.

B. **Beginning**—A continued. Reading; folk songs and proverbs. Three hours attendance. Second semester.

## HORTICULTURE

Associate Professor Hood and Assistants

The Horticulture Department is located on the first floor of the new Plant Industry Building and is well supplied with laboratories and class rooms. The laboratories are well adapted for practical work in spraying, propagation and the general practice work such as seed testing, grafting, budding, etc. The campus and arboretum contain a large assortment of trees, shrubs, and vines which give the student opportunity to get acquainted with the most important ornamental plants. The gardens and orchards show the best cultural methods to follow and the greenhouses and hot beds give an idea of the importance of growing vegetables out of season for home use.

The aim of this Department is to give the student an understanding of the practical operations connected with the different branches of Horticulture, and some idea of the main principles underlying these operations. The subject is taught by lectures and practice work in the laboratory and field. The work of the first year deals with the elements of Horticulture, such as the study of seeds, propagation of plants, spray and spraying material, pruning and a few elementary principles underlying orcharding and gardening. The work of the second year takes up in detail a few important operations in vegetable gardening and orcharding. In the course for women more stress is laid on vegetable gardening and ornamental plants for home use and home decorations.

### COURSES REQUIRED FOR MEN

A. **Elements of Horticulture**—A study of the general principles of Horticulture, as seeds and seeding, propagation, such as budding, grafting and also pruning and spraying. Two hours attendance. Two hours laboratory. First semester.

B. **Elements of Horticulture**—A continued. The selection of site of orchard and garden; the study of the methods of tillage, care of tools, planting, laying out of the orchard and garden, and a study of a few of the best varieties to grow for home use. Two hours attendance. Two hours laboratory. Second semester.

COURSES REQUIRED FOR WOMEN

C. **Home and Ornamental Horticulture**—The work taken up in this course, will attempt to cover the principles of vegetable gardening and ornamental planting for home use and ornamentation. The choice and culture of house plants will also be discussed. The laboratory work will be devoted to the study of seeds, practice in making of cuttings of some ornamental shrubs and house plants. Two hours attendance. Two hours laboratory. First semester.

D. **Home and Ornamental Horticulture**—Continuation of C. Two hours attendance. Two hours laboratory. Second semester.

ELECTIVE—SENIOR MEN

E. **Commercial Horticulture**—The first half of the work will include the study of the vegetable crops on a commercial basis. Cultural methods, marketing and shipping will be discussed. The laboratory work will include exercises giving practice in various operations, such as sorting, packing, judging, seed testing, etc. Two hours attendance. Two hours laboratory. First semester.

F. **Commercial Horticulture**—This course includes the discussion of the various phases of fruit culture such as propagation, cultivation, marketing, etc. The apple, pear, plum and cherry will be discussed. The study of the packing and shipping methods as well as the profits derived from fruit growing will be given attention. Two hours attendance. Two hours laboratory. Second semester.

## MATHEMATICS

Adjunct Professor Loughridge, Miss Zimmer

Elementary Algebra through Quadratics and Plane Geometry are required of all students in the first three years of the course in the School of Agriculture. If in the fourth year the student elects the University preparatory course, additional work is required of him in both Algebra and Geometry.

**Beginning Algebra** is given for three semesters, with four recitations a week. A large part of this work is literal arithmetic, which affords a review of the fundamental principles of arithmetic. Much practice is also given in the solution of simple equations and problems.

**Plane Geometry** is given during the third year, two recitations a week. Students electing the University preparatory course of the fourth year

will complete the work in both Algebra and Geometry necessary for entrance credit to the University. Algebra will be continued through quadratics and logarithms.

COURSES FOR MEN

A. **Beginning Algebra**—Fundamental Operations. Factoring. The Equation. Four hours attendance. First semester.

B.—A continued. Four hours attendance. Second semester.

C.—Continuation of A and B, through quadratics. Four hours attendance. First semester.

E. **Plane Geometry**—Two hours attendance. First semester.

F.—E continued. Two hours attendance. Second semester.

G. **Algebra and Geometry**—Elective in University Preparatory Group. Plane Geometry completed and Algebra through logarithms. Four hours attendance. First semester.

H.—G continued. Four hours attendance. Second semester.

COURSES FOR WOMEN

A.—See course A for men.

B.—See course B for men.

C.—Continuation of A and B through quadratics. Three hours attendance. Second semester.

D.—Course C continued. Three hours attendance. Second semester.

E.—See course E for men.

F.—See course F for men.

G.—See course G for men.

H.—See course H for men.

## NORMAL TRAINING

Mr. Eaton

This course is intended for those who wish to become teachers in rural or village communities. It consists of the subjects required by law of the Normal Training high schools. It also comprises a course in professional training together with observation work done in the school rooms of experienced teachers, both in city and rural districts, and thorough reviews of the common branches. Drawing, Penmanship, Mental Arithmetic, and Orthography each are carefully reviewed.

It is open to third and fourth year students. A county certificate is granted to those completing the course.

COURSES

A. **Pedagogy**—A study of methods of instruction and school-room management, together with the psychological basis for the same. Observation work in the school room of best elementary teachers, and at least two rural teachers. Three hours attendance. First semester.

B.—A continued. Topics relating to the teacher and school management in general will be assigned each member of the class. This discussion to be given before class. Three hours attendance. Second semester.

C. **Reviews**—Six weeks each are devoted to the study of Arithmetic, Geography, Grammar, and Reading from both a professional and academic standpoint. Six hours attendance. First semester.

D.—C continued. Six hours attendance. Second semester.

E. Reviews in the remaining subjects of the ordinary grade and rural school curriculum. Three hours attendance. First semester.

F.—E continued. Three hours attendance. Second semester.

G. **Agricultural Education for Rural Schools**—Organization of agricultural material for use in rural schools. Correlation of agriculture with other subjects in the course of study. Three hours attendance. Second semester.

## PHYSICS

Mr. Smith, Mr. Lanphere

Instruction in the subject of Physics is given in the second year of the course for women and in the third year of the course for men.

**Course A**—First semester. The work will be introduced by a thorough course in measurements, using the Metric System and making necessary comparisons with the English System. This is followed by a study of Force and Motion, Hydrostatics, and Pneumatics. A course in Molecular Motions and Molecular Forces precedes the study of Thermometry—Expansion Coefficients. The study of Work and its relation to Mechanical Energy and Heat Energy, followed by a course in Heat proper closes the semester.

**Course B**—Second semester. The work in Magnetism and Electricity takes the major part of the second semester, but Light and Sound are also given considerable time.

The course has been planned to keep the practical side in view while working on the theoretical and it is hoped to make a final and lasting impression of the principles studied by making several excursions to the

different industries of the city where practical application of these principles can be observed.

**For Men**—Three recitations and four hours laboratory per week.

**For Women**—Three recitations and four hours laboratory per week.

**Course C**—An additional course offered in the fourth year for students preparing to enter the University. This will include more quantitative work, a more detailed study of some of the most fundamental laws of Physics and their applications, and thorough practice in the solution of practical problems. Two hours recitation. Two hours laboratory. First semester.

## HOME ECONOMICS

Head Professor Loomis, Adjunct Professor Davis, Miss Shonka, Miss Brown, Miss Ohlsen, Miss Miskell

The fact that sooner or later most women undertake the duties and responsibilities of the home, and also that the major portion of the time and attention of the majority of women is occupied with the home, or subjects relating thereto, are sufficient reasons why courses in home science, art and economy should be introduced into educational institutions where women are students. The public is now recognizing these facts and awakening to the need of making provision for the instruction of women in subjects relating to home life. People are coming to believe that, so far as the welfare of the state is concerned, the training of women in home economics is quite as essential as is the training of men in agriculture and engineering. Furthermore, there is a growing sentiment in the rural communities that it is just as necessary for the farmer's daughter to have an opportunity to study home management as it is for his son to study farm management. There has, accordingly, arisen a demand for a place for young women in the School of Agriculture, where they may receive instruction in those branches which have to do with home keeping. To meet this demand, a three-story brick building has been erected on the University Farm. This building is designed to serve the double purpose of providing a home for women while in attendance at the school, and a place where laboratory work in the household arts subjects may be given.

**Course of Study.** It will be seen by reference to the Course of Study that the women pursue the same academic studies as the men. They likewise have courses in horticulture, wood work and dairying. But instead of the subjects relating to farm crops and animals, given in the course for

men, they are given instruction in cookery, sewing, construction, decoration, and care of the home. These subjects are taught by the lecture laboratory method with practice work in the laboratories. The purpose is to teach women how to prepare food so that it shall be both wholesome and palatable, how to make garments so that the family may be clothed in the most satisfactory manner with the money available, how to keep a house in a sanitary and attractive condition with the least expenditure of money and effort, how to feed and care for children, and what to do in emergencies. The students through their study and practice learn to respect the work of the home-keeper and come to a better understanding of the significance and importance of the home in its relation to society.

Students completing this course may choose the Normal Training work which will prepare them for teaching in the rural schools, or they may elect the University Preparatory work which will admit them to the College of Agriculture in the University.

COURSES

A. **Sewing and Design**—Fundamental principles of hand and machine sewing applied to making of household articles and undergarments. Repairing by patching and darning. Textiles, their manufacture, quality and value. Principles of design applied to Household Art. Three hours attendance. Six hours laboratory. First semester.

B. **Sewing and Design**—A continued. Second semester.

C. **Cooking**—Elementary study of the selection and preparation of food based upon its composition. Two hours attendance. Four hours laboratory. First semester.

D. **Cooking**—C continued. Second semester.

E. **Advanced Cooking**—Preservation of food. A study of the choice of food for adults and children in health and disease. Preparation and service of lunches and meals. Two hours attendance. Four hours laboratory. First semester.

F. **Advanced Cooking**—Continuation of course E. Three hours attendance. Six hours laboratory.

G. **Household Art**—Drafting and use of patterns. Cutting, fitting and finishing of dresses. Simple embroidery. Textiles, including care, cost and hygiene of clothing. Three hours attendance. Six hours laboratory. First semester. See course L.

H. **Household Art**—Continuation of course G. See course M.

I. **House Practice**—Decoration and care of the house. The study begins with the student's room and includes lecture and laboratory work and excursions. One hour attendance. Two hours laboratory. First semester. Course I must be taken in connection with course C.

J. **House Practice**—Construction, lighting and heating of the home. A continuation of course I and taken in connection with course D.

K. **House Practice**—An elementary study of problems in household management. One hour attendance. Two hours laboratory. First semester. Course K must be taken in connection with course E.

L. **Normal Course in Domestic Science and Art**—Seniors in the Normal Course will have two hours attendance and four hours laboratory in course G and one hour attendance and two hours laboratory in the study of work in Domestic Science that may be introduced into rural schools with very little equipment.

M.—Continuation of course L dealing with Domestic Art.

## SCHOOL OF AGRICULTURE

### CLASS OF 1914

Abbott, Harry Earle.....Tecumseh
Adams, Perry Oliver.....Venus
Aker, Parker Ward.....Harvard
Arnold, Martha May.....Inavale

Bagley, Clarence Odell.....Lincoln
Beach, Irving Judson.....Clinton, Mich.
Benham, Thomas Edwin.....Lincoln
Blaikie, Harold Essex.....Weeping Water
Buford, John Mathew.....Falls City
Bull, Henry Carsten.....Elkhorn
Burgess, Charles Norman.....Omaha
Bush, Vernon DeVoe.....Naponee

Carlson, Walter Richard.....Ceresco
Chamberlain, Robert Chester.....North Platte
Chilcoat, Esther Marie.....Stanton
Coplen, Clarence Peter.....Shickley

Engleman, Oliver Milton.....Grand Island
Enyeart, Thomas Ross.....Hemingford
Essig, Cecil.....Red Cloud
Evans, George Leslie.....Bellevue

Fausch, Carl Nathaniel.....Guide Rock
Fausch, Norma Amalie.....Guide Rock
Feather, Orin Thomas.....Havelock
French, Bryan Henry.....Page
From, Guy D.....David City

Geary, Reginald Benjamin.....Inman
Greig, Grace Alice.....St. Edward

Harris, Cecil Cleon.....Fairbury
Haskell, Riley Kent.....Arnold
Haumont, Joseph Anthony.....Elton
Heikes, Eugene Vernon.....Dakota City
Higgins, Carrie Kathryn.....University Place
Higgins, John Clifford.....Nelson
Holding, Tom Lawrence.....Whitney

Householder, Fred Bryan ..... Bladen

Ihm, Joseph Marion ..... Omaha

Kelly, Fred ..... Nora
Kinney, Albert Edward ..... Elgin
Kinney, Floyd E ..... Wymore
Koester, Anna Christine ..... Scribner
Krebs, Byron J ..... Scotia

Lancaster, Frank Horace ..... York
Loseke, Ernst Walter ..... Columbus
Loughridge, Olive ..... Lincoln

McClellan, Hazel ..... Lincoln
Mapes, Carroll DeWitt ..... Lincoln
Marshall, Victor Vernon ..... Arlington
Meese, Charles Ogle ..... Ithaca
Monette, Raymond Allemand ..... Stella
Monnich, Charlotte Margaret Martha ..... Hooper
Montgomery, Philip Henry ..... Elwood
Murray, Charles Arthur ..... Elwood

Nelson, Joseph Clarence ..... Oakland
Norton, Olive Elvira ..... Lincoln

Pearson, Victor Nels ..... Genoa
Posson, Melancthon Braham ..... Hayes Center
Powell, Louis F ..... Alliance

Rail, Hovey Ray ..... Birmingham, Ia.
Randel, Elmer Chester ..... McCook
Reed, Glen Hobart ..... Lincoln
Rees, William H ..... Carroll
Reiher, Robert Edward ..... Red Cloud
Renard, Edward John ..... Arlington
Richards, Helen ..... Lincoln
Roberts, Walter Freeman ..... Joy
Robertson, James William ..... Madison
Rouse, Verne Enoch ..... Grand Island
Rystrom, Raymond Wendell ..... Stromsburg

Sandstrom, Lottie Christine ..... Ceresco
Savage, Warren Curtis ..... Spalding
Scott, Lawrence Irving ..... Duluth, Minn.

Siegrist, Florence Eleanor . . . . . Ceresco
Snodgrass, Wilbur Starr . . . . . Talmage
Stewart, Lloyd Joshua . . . . . Valparaiso
Stubbe, Henry . . . . . Central City
Sutton, Anna May . . . . . Wahoo
Sutton, Ellen Ely . . . . . Wahoo
Swanson, Lydia Victoria . . . . . Aurora

Terry, John Edward . . . . . Monroe
Thompson, Lee William . . . . . Lincoln
Thurber, Alleyene Newman . . . . . Lincoln
Trott, Marie . . . . . Lincoln

Vincent, Lee Beardsley . . . . . Salem, O.

Walker, Deane Campbell . . . . . Dunbar
Walline, Carl Axel Verner . . . . . Funk
Wells, Charles Edward . . . . . College View
Weston, John Waldo . . . . . Beatrice
Wheeler, Addie Louise . . . . . Lincoln
Wilcox, Lemuel Rex . . . . . Arborville

## ROSTER OF STUDENTS 515

## SCHOOL OF AGRICULTURE

## STUDENT LIST

### 1913-1914

| Name | Year | Home |
|---|---|---|
| Abbott, Dee L | 3 | Long Island, Kan. |
| Abbott, Harry Earl | 4 | Tecumseh |
| Adams, Claire Alfred | 3 | University Place |
| Adams, Frank Leslie | 2 | Mullen |
| Adams, Perry Oliver | 4 | Venus |
| Aden, Tapka Emily | 3 | University Place |
| Adkins, Nellie Margaret | 3 | Lincoln |
| Aker, Parker Ward | 4 | Harvard |
| Aker, Russell Harland | 3 | Harvard |
| Aldrich, John | 2 | Lincoln |
| Alfreds, Gilbert Leo | 1 | Genoa |
| Amos, Leonora | Special | University Place |
| Anderson, Alvord Rosen | 2 | Concord |
| Anderson, Arthur Ephraim | 2 | Newman Grove |
| Anderson, Ivar H | 1 | Concord |
| Anderson, Mark Frederick | 2 | Belgrade |
| Anderson, Orla Francis | 3 | Nemaha |
| Anderson, Robert Ernest | 1 | Colon |
| Armann, Hazel Roy | 1 | Martell |
| Arnold, Martha May | 4 | Inavale |
| Ashton, Edith Mary | 3 | Lincoln |
| Bacon, Fay E | 1 | Crab Orchard |
| Bagley, Clarence Odell | 4 | Lincoln |
| Baker, Ethel DeVonne | 3 | Laurel |
| Baker, Floyd Elton | Special | Tilden |
| Baker, William Russel | 3 | Lincoln |
| Barton, Arthur Leonard | 3 | Arlington |
| Baugher, Dexter Leslie | 3 | Bucklin, Mo. |
| Beach, Irving Judson | 4 | Clinton, Mich. |
| Beemer, Fern Marie | 2 | Lincoln |
| Benham, Thomas Edwin | 4 | Lincoln |
| Benson, Mable Victoria | 1 | Hordville |

| Name | Year | Home |
|---|---|---|
| Benson, Palmer | 1 | Arcadia |
| Berkman, Anna Marie | Special | Lincoln |
| Berryhill, James Bryan | 3 | Gresham |
| Bessie, Frank Edmund | 3 | Kearney |
| Bever, Virgil C | 2 | Lewiston |
| Biba, Anton | 2 | Exeter |
| Blaikie, Harold Essex | 4 | Weeping Water |
| Blank, Roy Francis | 1 | Rising City |
| Bock, Anna Marie | 2 | David City |
| Boettger, William Jochin | 3 | Florence |
| Boker, Louise Anna | 3 | Arlington |
| Booth, Esther Ann | 1 | Sunol |
| Booth, Fannie J | 3 | Central City |
| Bordner, Beulah Leona | 3 | Stanton |
| Borg, Roy Conrad | 1 | Oakland |
| Boyd, Warren Edward | Special | Juniata |
| Boyer, Haskle Dennis | 1 | Mullen |
| Boyer, Verity Cecelia | 3 | Alliance |
| Brackman, Edward Frederick | 3 | Minatare |
| Bredehoft, Sophia Lean | 3 | Berlin |
| Brennemann, Rolf Holly | 1 | Hyannis |
| Brich, Georgia Anna | 2 | Pender |
| Bricka, Philip Rea | 3 | Lincoln |
| Briggs, Robert J | 3 | Fremont |
| Brinklow, George William | 3 | Plattsmouth |
| Britt, Harriett Edith | 4 | Cedar Bluffs |
| Brooks, Francis | 2 | Lincoln |
| Brunell, Meta Marie | Special | Bethany |
| Buford, John Mathew | 4 | Falls City |
| Bull, Henry Carsten | 4 | Elkhorn |
| Burbank, Harry Harlan | 3 | Filley |
| Burgess, Charles Norman | 4 | Omaha |
| Burke, Philo David | 2 | Lincoln |
| Burr, Voris V | 3 | North Platte |
| Burris, Waldo Ralph | 1 | Elsmere |
| Burt, Luther Longstreet | 3 | Gibbon |
| Burton, Alva Lewis | 2 | Bingham |
| Burton, William McKinley | 2 | Bingham |
| Busch, Herman G | 1 | Steinauer |

| Name | Year | Home |
|---|---|---|
| Bush, Vernon DeVoe | 4 | Naponee |
| Butler, Ruth Annie | 3 | Lincoln |
| Butler, Leland | 3 | Lincoln |
| Calkin, Newell Garrison | 1 | Syracuse, Kan. |
| Campbell, Alice Minerva | 3 | Bethany |
| Campbell, Angus | 2 | Lincoln |
| Campbell, Franklin Balmot | 3 | Central City |
| Carder, Truman Lloyd | 3 | Creighton |
| Carlisle, Walter Eugene | 1 | Bradshaw |
| Carlson, Walter Richard | 4 | Ceresco |
| Carpenter, Erwin Russell | 2 | Arden |
| Carr, Luther Ray | 3 | Springview |
| Carr, Roy Olga | 1 | Springview |
| Carver, Frank Alonzo | 2 | Cambridge |
| Chace, Nell | Special | Pilger |
| Chamberlain, Robert Chester | 4 | North Platte |
| Chatfield, Floyd Wade | 2 | Rosevale |
| Chestem, Abner Kenneth | 3 | Decatur |
| Chilcoat, Esther Marie | 4 | Stanton |
| Chrisman, Edna Grace | 3 | Lincoln |
| Christensen, Lauriths Chris | 2 | Minden |
| Cizek, Joseph Charles | 3 | Prague |
| Clausen, Hilda Maxine | 1 | Nebraska City |
| Coale, Bradbury Bedell | 3 | Bennet |
| Cochran, Byron George | 2 | Lincoln |
| Conley, Frank Walton | 3 | Seward |
| Cooke, Roy Franklin | 1 | Bartlett |
| Coplen, Clarence Peter | 4 | Shickley |
| Copley, Joseph Clifton | 1 | Bennet |
| Corby, Robert Stanley | 1 | Neligh |
| Corby, William Arthur | 3 | Neligh |
| Cornils, Arnold | 1 | Columbus |
| Cornils, Paul Henry | Special | Columbus |
| Counce, Mark Raymond | 3 | Hayes Center |
| Crannell, Alvin Andrew | Special | Tekamah |
| Crook, Ralph Edward | 3 | Meadow Grove |
| Cropsey, Harry Thorburn | 3 | Lincoln |
| Cross, John Raymond | 1 | Union |

| Name | Year | Home |
|---|---|---|
| Cullen, Raleigh Ray | 1 | Beatrice |
| Davis, Robert Walter | 3 | Lincoln |
| Deane, Cecil F | Special | Valparaiso |
| Deeds, Ray Delbert | 3 | Stromsburg |
| Deselms, Wayne | 2 | Edison |
| Dickson, Fern | 2 | Lincoln |
| Dietz, Stacy Taylor | 3 | Broken Bow |
| Dixon, Harry M | 1 | Council Bluffs, Ia. |
| Donahoo, Harry J | Special | University Place |
| Dorland, Enid | 3 | Bennet |
| Drobny, Ladislav | 1 | Comstock |
| Dudley, Lulu Blanche | 2 | University Place |
| Dullenty, Myrtle | 2 | Lincoln |
| Dysart, Floyd Eugene | 3 | Eagle |
| Eaton, Mrs. O. D. | Special | Lincoln |
| Elfeldt, Lillian Estelle | 2 | Lincoln |
| Elliott, John Beckley | 1 | Elmwood |
| Engleman, Oliver Milton | 4 | Grand Island |
| Enyeart, Thomas Ross | 4 | Hemingford |
| Eoff, Lee Gerhart | 2 | Central City |
| Erickson, David Ludvig | 3 | Funk |
| Eschenburg, Helen | 1 | West Point |
| Eshelman, Clifford Franklin | 3 | Red Cloud |
| Essig, Cecil | 4 | Red Cloud |
| Evans, George Leslie | Special | Bellevue |
| Eyestone, Howard | 4 | University Place |
| Fairley, Ira S | 1 | Bethany |
| Farren, Millie Mary | 3 | Lincoln |
| Faulhaber, Carl Adam | 1 | Brownlee |
| Faulhaber, Roy Lewis | Special | Brownlee |
| Faulhaber, Ruby May | 1 | Brownlee |
| Fausch, Carl Nathaniel | 4 | Guide Rock |
| Fausch, Norma Amalie | 4 | Guide Rock |
| Fawell, Robert | Special | University Place |
| Feather, Orin Thomas | 4 | Havelock |
| Ferris, Lisle William | 2 | Central City |
| Fisher, James | 3 | Elba |
| von Forell, W. Earl | 1 | Scottsbluff |

| Name | Year | Home |
|---|---|---|
| Foster, Guy Ernest | 3 | York |
| Foster, Alice Lella | 4 | Lincoln |
| Francke, Edmund Fred | 2 | Bennet |
| French, Bryan Henry | 4 | Page |
| French, Mildred Pearl | 3 | Lincoln |
| From, Guy D | 4 | David City |
| Frost, Harold Bannell | 3 | Lincoln |
| Gamble, Ruth Lucy | 3 | Mead |
| Garwood, Rodney Vernon | 3 | Carroll |
| Geary, Reginald Benjamin | 4 | Inman |
| Gerd, Arvid | 3 | Stamford |
| Gertsch, Gilbert | 3 | Platte Center |
| Getty, Grace Idella | 3 | Waco |
| Gilbert, William Connor | 2 | Lincoln |
| Gilligan, George Ward | Special | Lincoln |
| Gist, Silas Frank | 3 | Falls City |
| Glebe, Eveline Emily | 1 | Hallam |
| Goldsmith, Avis Irene | 1 | Lincoln |
| Gonzales, John Clark | 3 | Elmwood |
| Goodell, Walter Ernest | Special | University Place |
| Gooden, Judd D | Special | Hubbell |
| Gramlich, Barbara Elizabeth | 3 | Ft. Crook |
| Greenamyre, Ralph | 1 | Cheney |
| Gregg, Robert Mansfield | 2 | Alliance |
| Greig, Grace Alice | 4 | St. Edward |
| Griswold, Jennette | 1 | Lincoln |
| Griswold, Wallace Newton | 3 | Lincoln |
| Guildner, Virgil Ivan | Special | Grant |
| Hall, Glenn J | 2 | Ithaca |
| Hall, Marjory | 3 | Alvo |
| Hall, Sumner B | 2 | Alvo |
| Halverson, Leroy | 1 | Genoa |
| Hangartner, Fritz F | 3 | Madison |
| Hanna, Floyd Steele | 2 | Lexington |
| Harm, Alfred William | 3 | Bloomfield |
| Harr, Evan Arthur | 2 | Ainsworth |
| Harr, Wanda May | 2 | Ainsworth |
| Harr, Tim | 1 | Lincoln |

| Name | Year | Home |
|---|---|---|
| Harrington, Glea Battell | 2 | Bradshaw |
| Harris, Cecil Cleon | 4 | Fairbury |
| Harris, Ivan Ellsworth | 2 | Rising City |
| Harrison, John Ernest | 2 | University Place |
| Harrison, William H | Special | Dunbar |
| Haskell, Riley Kent | 4 | Arnold |
| Haskell, Laura Hazel | 2 | Arnold |
| Haumont, Joseph Anthony | 4 | Elton |
| Hecht, Alvah Ross | 2 | Curtis |
| Hector, Louis Henry | 2 | South Auburn |
| Heeney, Raymond William | 1 | Hubbard |
| Neesch, John J | 1 | Nebraska City |
| Heikes, Eugene Vernon | 4 | Dakota City |
| Hess, Willard James | 3 | University Place |
| Heuermann, Bernard Benjamine | 2 | Phillips |
| Higgins, Carrie Kathryn | 4 | University Place |
| Higgins, John Clifford | 4 | Nelson |
| Hill, Muratt John | 1 | (Deceased) |
| Hill, Rose | Special | Culbertson |
| Hite, Ethel Belle | 3 | Beatrice |
| Hoagland, William Weller | 1 | Swan |
| Hoar, Edgar Merritt | 3 | Walthill |
| Hoch, Alice Virginia | 1 | Lincoln |
| Hoch, Eva Fern | 3 | Lincoln |
| Holbrook, Arthur Claude | 3 | Orchard |
| Holbrook, Harvey J | 3 | Orchard |
| Holding, Tom Lawrence | 4 | Whitney |
| Horacek, Ralph James | 3 | Belgrade |
| Horrum, Clara Elsie | 3 | Adams |
| Householder, Fred Bryan | 4 | Bladen |
| Hromas, Emilie | 2 | North Bend |
| Hultquist, Eugene Farold | 2 | Oakland |
| Humphries, Earle Everett | 1 | Lincoln |
| Hunt, Russell Clyde | 3 | Bennet |
| Hurd, Marvin Dewey | 1 | Lincoln |
| Hyers, Martha Helen | 1 | Lincoln |
| Ihm, Joseph Marion | 4 | Omaha |
| Isham, George W | Special | Lincoln |

| Name | Year | Home |
|---|---|---|
| Jackson, Charles Wendell | 3 | Lincoln |
| Jackson, George Louis | 3 | Litchfield |
| Jackson, Kent Thomas | 1 | Purdum |
| Jackson, Wilma Kathleen | 2 | Lincoln |
| Jacoby, Julia Lavina | 1 | Havelock |
| Janecek, Martha | 1 | Clarkson |
| Jay, Ross Henry | 3 | Nebraska City |
| Jaynes, Smith Whitney | 3 | University Place |
| Jenkins, Carroll Caraway | 2 | Lincoln |
| Jenkins, Rebecca Catherine | 1 | Havelock |
| Jensen, Daniel | 2 | Cozad |
| Joerger, Floyd David | 3 | Lincoln |
| Johnson, Lawrence Marcus | 1 | West Point |
| Johnson, Regnar | Special | Norman |
| Johnson, Theodore Alvin | 2 | Lyons |
| Johnson, Verna Christina | 2 | Stanton |
| Jones, Dora C. Victoria | 1 | Marquette |
| Jose, Russell Harrison | 2 | Lewiston |
| Jurgens, Minnie | 1 | Cedar Bluffs |
| Kaiser, Lillian Minnie | 3 | Lincoln |
| Kaliff, Frank John | 1 | York |
| Kaliff, Otto Leroy | 1 | York |
| Kallemeyn, Elizabeth Merle | 2 | University Place |
| Kavan, Albert Clifford | 2 | Lincoln |
| Kellogg, Gordon Norris | 1 | Creighton |
| Kelly, Fred | 4 | Nora |
| Kennedy, John Ross | 1 | Page |
| King, Barney Herschel | 3 | Seward |
| Kinney, Albert Edward | 4 | Elgin |
| Kinney, Floyd E | 4 | Wymore |
| Kinney, Ray H | 3 | Elgin |
| Kleine, Arvilla Louise | 1 | Lincoln |
| Knapp, Raymond | 4 | Cedar Bluffs |
| Knowlton, Floyd Harold | 1 | Lincoln |
| Koerner, Viola Lina | 2 | Lincoln |
| Koester, Anna Christine | 4 | Scribner |
| Kohler, Frank Morrison | 2 | Geneva |
| Koken, Myrle Carmelita | 3 | Ruskin |

| Name | Year | Home |
|---|---|---|
| Krebs, Byron J | 4 | Scotia |
| Kreuger, Alfred William | 2 | Steinauer |
| Kubalek, Emma | Special | Weston |
| Lackey, Ben H | 1 | Scottsbluff |
| Lancaster, Frank Horace | 4 | York |
| Lanphere, Leonard Henry | 3 | Gresham |
| Larson, Raymond John | 2 | Normal |
| Larson, William George | Special | Hildreth |
| Lauridsen, Petra | 3 | Mason City |
| Leavitt, Viola Elizabeth | 2 | Lincoln |
| Lewis, John W | 2 | Big Horn, Wyo. |
| Liebers, August Fred | 3 | Lincoln |
| Liebers, Carl Ludwig | 2 | Lincoln |
| Lincoln, Burr | 1 | Lincoln |
| Lofgren, Hilmer Eldon | 1 | West Point |
| Longstreth, Martha May | 1 | University Place |
| Loseke, Ernest Walter | 4 | Columbus |
| Loseke, Helmeth Gart | 1 | Leigh |
| Loughridge, Olive | 4 | Lincoln |
| McClellan, Hazel | 4 | Lincoln |
| McConaughey, Lyle B | 1 | Stockham |
| McGee, James Eugene | Special | Clearwater |
| McKinney, Forrest Henry | 3 | Palmer |
| Magee, Ethel | 2 | Lincoln |
| Magill, Alice Mary | Special | Lincoln |
| Mammen, Fred Edward | 2 | McClelland, Ia. |
| Mapes, Carroll DeWitt | 4 | Lincoln |
| Mapes, Herschel Coventry | 1 | Schuyler |
| Mark, Arne | 2 | Kenilworth, Ill. |
| Marsh, Earl Crites | 3 | Archer |
| Marshall, Flora Catherine | 3 | Arlington |
| Marshall, Greta Ruth | 3 | Arlington |
| Marshall, Lola Mollie | 2 | Lincoln |
| Marshall, Victor Vernon | 4 | Arlington |
| Marshall, Wilbur Benjamin | 2 | Lincoln |
| Meese, Charles Ogle | 4 | Ithaca |
| Mellor, Kathryne Aller | 2 | Lincoln |
| Meyers, James W | 2 | Hendley |

| Name | Year | Home |
|---|---|---|
| Mieth, Nathalie Anna | 1 | Cairo |
| Mieth, Otto Herbert | 2 | Cairo |
| Miles, Maude Alice | Special | Bethany |
| Miller, Dennis Lyal | 3 | Alvo |
| Miller, Hazel Pearl | 2 | Normal |
| Miltner, Fred W | 1 | Waco |
| Mintling, Willard Joseph | 2 | Hayes Center |
| Miska, Wesley | 1 | Ord |
| Mockett, Earl Wilford | 3 | Lincoln |
| Monette, Raymond Allemand | 4 | Stella |
| Monnich,CharlotteMargaretMartha | 4 | Hooper |
| Montgomery, Philip Henry | 4 | Elwood |
| Moomey, Dean | 3 | Gresham |
| Moore, Oren W | Special | Gering |
| Moore, Paul Edwin | 3 | Tekamah |
| Morehouse, Clinton Cecil | 3 | Lincoln |
| Morris, Ruth Amy | 2 | Lincoln |
| Morris, William Allen | 1 | Norfolk |
| Murphy, James Lowell | 1 | Page |
| Murray, Charles Arthur | 4 | Elwood |
| Nebergall, Opal Iva | 3 | Gresham |
| Neighbors, Melvin William | 3 | Bayard |
| Neligh, Charlotte Catherine | 1 | West Point |
| Nelson, Harley | 1 | Walnut |
| Nelson, Joseph Clarence | 4 | Oakland |
| Nelson, Lloyd E | 1 | Genoa |
| Nelson, Metta Blanche | 1 | Walnut |
| Nelson, Walter Arthur | 1 | Pilger |
| Nicholas, Evelyn Lauretta | 2 | Stanton |
| Nicholas, Vern Bryan | 2 | St. Paul |
| Nicholson, Clyde G | 1 | Lincoln |
| Nicholes, Samuel Miller | 4 | EauClaire, Wis. |
| Noh, Herbert Frederick | Special | Albion |
| Norton, Olive Elvira | 4 | Lincoln |
| Ohlheiser, Paul | 2 | Lincoln |
| Ohmstede, Edwin Frederick | 3 | Guide Rock |
| Osborn, Mamie E | 3 | Weston, Ia. |
| Osbourne, Lewis Allen | 1 | Broken Bow |

| Name | Year | Home |
|---|---|---|
| Parker, Faye Louise | 2 | Lincoln |
| Patterson, George Raymond | Special | Fairmont |
| Payzant, Arthur Robie | 2 | Schuyler |
| Pearse, Ernest Nathaniel | 3 | Genoa |
| Pearson, George Virgil | 1 | Brownlee |
| Pearson, May A | 1 | Brownlee |
| Pearson, Victor Nels | 4 | Genoa |
| Peregrine, Ray Arthur | 1 | Fullerton |
| Pesek, Adolph | 1 | Comstock |
| Peters, Henry John | 3 | Scribner |
| Peterson, Florence Loa | 3 | Arlington |
| Pettis, Donald Lathrop | 1 | Lincoln |
| Philbin, Joseph Patrick August | 1 | Spalding |
| Phillips, Hazel Virginia | 3 | Walthill |
| Pierce, Frank Ernest | 2 | Atlanta |
| Pomeroy, Ross | 3 | Allen |
| Pope, Harry | 3 | Lincoln |
| Pope, John A | 1 | Silver Creek |
| Porter, Harold Orman | 1 | Lincoln |
| Posson, Melancthon Brahan | 4 | Hayes Center |
| Powell, Louis Fish | 4 | Alliance |
| Preston, Novia Veatch | 1 | Oakland |
| Raasch, Hugo Walter | 1 | Norfolk |
| Rail, Hovey Ray | 4 | Birmingham, Ia. |
| Randall, Winifred Martha | Special | Bennet |
| Randel, Elmer Chester | 4 | McCook |
| Reed, Glen Hobart | 4 | Lincoln |
| Rees, Muriel A | Special | Pilger |
| Rees, William H | 4 | Carroll |
| Reiher, Robert Edward | 4 | Red Cloud |
| Renard, Edward John | 4 | Arlington |
| Renjilian, Sarkis M | Special | Antioch, Turkey |
| Renken, Henry Edward | 1 | Talmage |
| Rice, Wilbur F | 2 | Clearwater |
| Richards, Helen | 4 | Lincoln |
| Richards, Hume Gibson | 2 | Lincoln |
| Richter, George Benjamin | 1 | Gresham |
| Rikard, Floyd Arthur | 3 | Lincoln |

| Name | Year | Home |
|---|---|---|
| Ring, Gladys Mary | 3 | Cheney |
| Ring, Joshua Andrew | 1 | Cheney |
| Ripley, George Henry | Special | Aladdin, Wyo |
| Rivett, Charles Walter | Special | Bethany |
| Rivett, Floyd Herbert | 1 | Bethany |
| Roberts, Walter Freeman | 4 | Joy |
| Robertson, Howard | 1 | Oakland |
| Robertson, James William | 4 | Madison |
| Robotham, Ira B | 1 | Lincoln |
| Rodgers, John Sheldon | 3 | Shannon, Ill. |
| Rogers, Arthur Ira | 2 | Decatur |
| Rokahr, Fritz Carl | 3 | Venus |
| Roos, Denver Dunbar | 3 | Dunbar |
| Rosene, Morris Emanuel | 2 | Stromsburg |
| Rosengren, Evedine Luella | 2 | Colon |
| Rouse, Verne Enoch | 4 | Grand Island |
| Rowe, Richard Franklin | 1 | Arcadia |
| Ruliffson, Joseph Harmon | 3 | University Place |
| Rystrom, Raymond Wendell | 4 | Stromsburg |
| Salmond, John Raymond | 3 | Stockham |
| Sanborn, Wayne Walter | 2 | Bethany |
| Sanstedt, Rudolph Marion | 2 | Lincoln |
| Sanstedt, Ruth Viola | 3 | Lincoln |
| Sandstrom, Elsie Isabel | 1 | Ceresco |
| Sandstrom, Lottie Christine | 4 | Ceresco |
| Savage, Warren Curtis | 4 | Spalding |
| Schopke, Fred Carl | 1 | Emerson |
| Scofield, John Howard | 3 | Lincoln |
| Scott, Blanche Faye | 3 | Rising City |
| Scott, Lawrence Irving | 4 | Duluth, Minn. |
| Scott, Leon Evans | 1 | Anselmo |
| Scrimsher, Avery William | 3 | Brock |
| Selby, Clifford Rudolph | 3 | Smithfield |
| Selby, Marion Louella | 3 | Smithfield |
| Shaw, Laura Margaret | 3 | Cheney |
| Shepard, Cecile Carolyn | 1 | Lincoln |
| Shopbell, Harry Elmer | Special | University Place |
| Shore, Susie Belle | 1 | Lincoln |

| Name | Year | Home |
|---|---|---|
| Shutt, Harold Elias | 2 | Lincoln |
| Siegrist, Florence Eleanor | 4 | Ceresco |
| Siemers, John Ervin | 1 | Wisner |
| Sinclair, Hubert D | 2 | College View |
| Sinclair, Mary Ella | 3 | College View |
| Sindt, John | 4 | Naponee |
| Sjogren, Henry Edwin | 3 | Funk |
| Slosson, Thomas Warren | 3 | Lincoln |
| Smith, George Perry | 3 | Lamar |
| Smith, Lloyd | 2 | Seward |
| Smith, Mildred Pauline | 3 | Lincoln |
| Smith, Pynsent Couchman | 3 | Beaver City |
| Sneddeker, Samuel | 2 | Brule |
| Snider, Paul Harold | 1 | Kearney |
| Snodgrass, Wilbur Starr | 4 | Talmage |
| Snyder, William Bryan | 1 | Mynard |
| Soost, Dora Olive | 3 | Bloomfield |
| Stalnaker, Percy | 1 | Benson |
| Stamper, Louis Edmund | Special | Rushville |
| Stanley, Harold Belmont | 3 | Riverton |
| Stelley, Arthur Frederick | Special | Albion |
| Stenger, Ernest John | 1 | Columbus |
| Stewart, Elizabeth Mary | 3 | Waco |
| Stewart, Leon Roy | 2 | Lincoln |
| Stewart, Lloyd Joshua | 4 | Valparaiso |
| Stinhoff, Roy Franklin | 1 | Comstock |
| Stoddard, Wayne Aldrich | 1 | Auburn |
| Stout, Oscar Charles | 2 | Lincoln |
| Strain, Stella May | 3 | Chester |
| Stratman, William Edward | 2 | Springfield |
| Stubbe, Henry | 4 | Central City |
| Sudbeck, August | 3 | Hartington |
| Sunderland, Hal Francis | 1 | Lincoln |
| Sutton, Anna May | 4 | Wahoo |
| Sutton, Ellen Ely | 4 | Wahoo |
| Swan, Karl | Special | Crab Orchard |
| Swanson, Lydia Victoria | 4 | Aurora |
| Talbot, Florence Irene | 2 | Cheney |
| Talbot, Guy William | 2 | Cheney |

| Name | Year | Home |
|---|---|---|
| Tanner, Clarence Francis | 3 | Bethany |
| Terry, John Edward | 4 | Monroe |
| Thompson, Lee William | 4 | Lincoln |
| Thompson, Leroy George | 1 | Atkinson |
| Thompson, Smith Harold | 1 | Atkinson |
| Thomson, Paul John | 2 | Florence |
| Thorsen, Niels | Special | Gordon |
| Thorsen, Sophie | 1 | Gordon |
| Thurber, Alleyene Newman | 4 | Lincoln |
| Todd, Glenn Roland | 1 | Murray |
| Tolles, Perry Kenneth | 3 | Laurel |
| Tomlinson, Hazel Ruth | Special | Belgrade |
| Torstensen, Thora Elfrieda | Special | Harvard |
| Tracy, Donald A | Special | Benson |
| Tracy, Mrs. Elizabeth | Special | Benson |
| Trenchard, John William | 3 | Cambridge |
| Trott, Marie | 4 | Lincoln |
| Trotter, Lillian Irene | 3 | Spalding |
| Vifquain, Elmer Victor | 3 | Springview |
| Vincent, Lee Beardsley | 4 | Salem, O. |
| Visek, Rudolph | 1 | Comstock |
| Von Spreckelsen, John Henry | 2 | Clay Center |
| Vorse, Robert Bruce | 2 | Yutan |
| Voss, Fred Henry | 2 | Lincoln |
| Voss, Margaret Marie | 1 | Lincoln |
| Wager, Vernon Gerald | 2 | Arlington |
| Walker, Deane Campbell | 4 | Dunbar |
| Walker, Joy Mortimore | 3 | Dunbar |
| Walline, Carl Axel Verner | 4 | Funk |
| Walter, Frances Mattie | 1 | Lincoln |
| Walter Lloyd Couffer | 1 | Rising City |
| Ward, Calen | 1 | Litchfield |
| Warner, George Chester Row | 2 | Waverly |
| Warp, Oscar | Special | Minden |
| Watson, Clarence J | 1 | Lincoln |
| Weekes, Viola Ruth | 1 | Lincoln |
| Wells, Charles Edward | 4 | College View |
| Weston, John Waldo | 4 | Beatrice |

| Name | Year | Home |
|---|---|---|
| Westover, Hazel Elizabeth | 3 | Lincoln |
| Wheeler, Addis Louise | 4 | Lincoln |
| White, John Ray | 1 | Lincoln |
| Wibbels, Richard Elmer | 3 | Arcadia |
| Wilberger, Gertrude Anna | 3 | Normal |
| Wilcox, Bessie Amanda | 1 | Cairo |
| Wilcox, Lemuel Rex | 4 | Arborville |
| Willard, Virgil Parkins | 3 | Omaha |
| Williams, Rue Edmund | 2 | Guide Rock |
| Wilmot, Everett Homer | 3 | Wilsonville |
| Wilson, Louis William | 1 | Bethany |
| Wilson, Lucy Jane | 3 | Douglas |
| Wilson, Susan Elizabeth | 1 | Lincoln |
| Wintermute, Russell Clark | 2 | Friend |
| Wiswell, Charles Thyng | 3 | Gresham |
| Wiswell, Frances Esther | 3 | Gresham |
| Witt, Reinhold | 1 | Scribner |
| Wittwer, Clara Louise | 3 | Lincoln |
| Wood, Clifford Henry | 1 | Florence |
| Wood, Richard Barton | 2 | Council Bluffs Ia. |
| Workman, Paul | 1 | Bayard |
| Worthman, Arthur Beebe | 1 | Omaha |
| Young, Daniel William | 3 | Mitchell |
| Ziegenbein, Frank Ernest | 1 | Memphis |
| Ziemann, Norman Paul | 1 | Benson |
| Zollars, Laurence | 1 | Ogallala |
| Zurbrick, Walter Edward | 3 | Verdon |

## SCHOOL OF AGRICULTURE

### ALUMNI

| Name | | Home Address |
|---|---|---|
| | 1901 | |
| Stuffer, David F | | South Omaha |
| | 1903 | |
| Beckord, Fred Henry | | Utica |
| Bottorff, Arthur Madison | | Gretna |
| Davis, Herbert William | | |
| Parmenter, Earl | | Kenesaw |
| Perin, Chester Dale | | Lincoln |
| Sohus, Allen Burnet | | |
| Steffen, Edward Elmer | | Diller |
| Stratton, Axel W | | Gresham, Ore. |
| Tolles, Earl Ankeny | | Laurel |
| Unitt, William Garfield | | Seward |
| | 1904 | |
| Beach, Frank Wardell | | Lincoln |
| Bille, Max Henry | | Palo Alto, Calif. |
| Brown, John Marshall | | York |
| Chase, Carl Fred | | Manhattan, Kans. |
| Dawson, James Wilber | | Lincoln |
| Ehlers, Harvey William | | Roca |
| Haskell, Earl Stanley | | |
| Little, Merle | | Lake Forest, Ill. |
| Lute, Harry Detlef | | Paxton |
| Mecham, Earl Alvin | | Kenesaw |
| Melick, Charles Wesley | | Detroit |
| Roberts, Herbert Haven | | Lincoln |
| Smutz, William Walter | | Burchard |
| Tolles, Chester Warren | | Laurel |
| Tolles, Ralph Louis | | Laurel |
| Vanderslice, Howard Roy | | Cheney |
| Young, Fred Louis | | Morrill |
| | 1905 | |
| Coad, Arthur Lawrence | | Omaha |
| Cramer, William Glenn | | Albion |

Dickman, Lloyd Lavern ..... Lincoln
Dill, Earl Philip ..... Belvidere
Downey, William Fuller ..... Fairbury
DuBois, Ernest Blois ..... San Rafael, Calif.
DuBois, Henry Augustus ..... Lower Lake, Calif.
Gurney, Charles Edward ..... Red Cloud
Harnly, Earl Russell ..... Lincoln
Herron, Leonard S ..... Lincoln
Holub, James William ..... Fort Crook
Hopt, Erwin ..... Lincoln
Hubbard, Edward Garieth ..... Brock
Jameson, Edward Lester ..... Moomaw
Lazure, Charles Basil ..... Blair
McCartney, Herbert Ellsworth ..... Ames, Iowa
McNeel, Daniel Baker ..... North Platte
Marino, Erasto A ..... Buenos Ayres, Argentine Republic
Newell, Jesse Dawson ..... Lette, Iowa
Parmenter, Elza ..... Kenesaw
Pettycrew, Earl Milton ..... Harmony
Pochon, Frederick Adolph ..... Strasburger
Ruff, Ernest Allen ..... Papillion
Searle, Ralph Homer .....

1906

Ankeny, Mark Tolles ..... Laurel
Armstrong, William James ..... Ord
Blanchard, Warren Holder ..... Friend
Boyd, Frank C ..... Juniata
Brockman, Otto Henry ..... West Point
Broderick, Carl Alexander ..... Fairfield
Colvin, Arba Daniel ..... Skidmore, Mo.
Cottril, Roy Elden ..... Skidmore, Mo.
Davis, Ollin Lotis ..... Pawne City
Dawson, Ralph Ward ..... Lincoln
Douglas, Howard Walter ..... Lincoln
Erickson, Robert Theodore ..... Kress, Texas
Field, Otis Sikes ..... Wright, Texas
Forward, Floyd Frederick ..... Prairie Hill, Mo.
Gibb, John James ..... Staplehurst
Grant, James Irwin ..... Emerick

Harvey, Glenn Andrew ..... Lincoln
Hoye, Thomas Patrick ..... Wood River
Jacobs, David Wesley ..... Lincoln
Jenkins, Muir Tease ..... Lincoln
Matteson, Fred Hayward ..... (Deceased)
Mecham, Floyd Joseph ..... Kenesaw
Middleton, James A. Garfield ..... Brady
Nickey, Paul Amos ..... Kearney
Pedrett, Ulrich ..... Kimball
Peterson, Frederick Ferdinand ..... Herman
Pickens, Plato ..... Huntley, Mont.
Porter, George Lyon ..... Chicago, Ill.
Prentice, George Sylvester ..... Hebron
Reid, James A ..... (Deceased)
Rist, Frank J ..... Humboldt
Sjogren, Carl Fred ..... Kress, Texas
Slocum, Clayton Newton ..... Blair
Snodgrass, Omer Leslie ..... Johnson
Strawn, Roy Jackson ..... Wymore
Stein, Herman Christian ..... Owanka, S. D.
Stelk, Willie Detlef ..... Grand Island
Van Boskirk, John ..... Lincoln
Wood, William Righter ..... Omaha
Young, Lee Andrew ..... Craig

**1907**

Allison, Harry ..... York
Barkhoff, James August ..... Fort Shaw, Mont.
Barnes, Welton Casner ..... Auburn
Benger, Curtis Baden ..... Callaway
Bigelow, Alfred Rufus ..... Fairbury
Blair, Benjamin Vernaldo ..... Lexington
Bolling, John August ..... Hawarden, Sask.
Bonner, Ernest Edward ..... Shelby
Bowman, Carl Eugene ..... Hardin, Mont.
Brodecky, Emil Ernest ..... Howells
Condict, Winthrop Campbell ..... Saratoga, Wyo.
Conley, Frank Wellington ..... Broken Bow
Cornils, Arthur Herman ..... Bushnell
Crabtree, William Able ..... Bethany

Culver, Vere Sanford ..... Central City
Currier, Edwin Lovejoy ..... St. Edward
Duncan, James Roy ..... Peru
Edgecombe, Tyler Mengel ..... Beatrice
Fawell, George William ..... Lincoln
Ford, Archibald Maurice ..... Oakland
Gross, Robert Arthur ..... Omaha
Hall, Randall Harris ..... Groton, S. D.
Haumont, William Thomas ..... Elgin
Kasak, Peter ..... Davenport
Kimbrough, Claude James ..... Geneva
Kinney, Earl DeWitt ..... Wymore
Kuska, Valentine ..... Ohiowa
McKinney, James G. ..... Wilsonville
Miller, Lewis B ..... Monte Vista, Colo.
Morrassy, Edward Anthony ..... Dorchester
Myres, Morris Elwin ..... Broken Bow
Pierce, Frank Edward ..... Tekamah
Shotwell, Roy Thomas ..... Sayre, Oklahoma
Thurston, Willet Minor .....
Westover, Fred Amos ..... Lincoln
Wilson, Alfred Wayne ..... Alliance

**1908**

Andrews, Charles Henry ..... Anselmo
Bailey, Earl William ..... Pacific Grove, Calif.
Barr, Harrison George ..... Stanton
Barth, Arthur ..... Billings, Montana
Beckord, Martin Oswald Reinhardt ..... Utica
Beebe, Prentise Eli ..... Ames
Brockman, Ross Wallace ..... Humboldt
Cheek, William Harrison ..... South Omaha
Clark, David Dean ..... Victoria, Texas
Clarke, Robert Elmer ..... New Castle, Wyo.
Clifton, Elisha Elliott ..... University Place
Cummins, Herschel Burton ..... Seward
Francis, Roy Edward ..... Lincoln
Gramlich, Howard John ..... Lincoln
Gurney, Joseph ..... Inavale
Hardin, Harry D ..... Alma

Harding, William Gates.....Tekamah
Haug, James Henry.....Shelton
Hayward, Chester Joseph.....Deer Trail, Colo.
Hufman, Glenn Clair.....University Place
Kendell, Everett Gay.....Inchelium, Wash.
King, Howard Scott.....Schuyler
Laub, Fred Norman.....Chapman
Loomis, Theron Theodore.....Lincoln
McNare, Herbert Cleveland.....Valentine
Marsh, Lewis Folsom.....Bozeman, Mont.
Marshall, Roy Edgar.....Arlington
Monson, Andrew Magnue.....Osceola
Mullenhoff, Herman George Julius.....Gresham, Ore.
Nerud, George.....Dorchester
Nightingale, Herbert Spencer.....Loup City
Parmenter, John Glenn.....Los Angeles, Calif.
Poitevin, Lawrence.....Norden
Ramser, William Frederick.....Washington
Ransom, Schuyler.....Clay Center
Rickley, Frederick Augustus.....Omaha
Rupert, Homer Benjamin.....Broken Bow
Schoenleber, Walter Raleigh.....Bethany
Shedd, Arthur Reed.....Loomis
Smelser, Harry Horatio.....Julesburg, Colo.
Streitz, Charles Uhlig.....Millard
Tinker, Edward Porter.....Narka, Kan.
Uhl, Roy Spencer.....Lincoln
Ulmann, Karl August.....
Vanderberg, Evert De Witt.....Dillon, Montana
Wertman, Clarence Charles.....Milford
Westover, Edward Clarence.....Lincoln
Witt, Rudolph.....Scribner
Woodward, Ernst Franklin.....Hebron
Yates, Clark Webb.....Geneva

**1909**

Albert, John, Jr.....Wahoo
Allen, Ephream David.....Clay Center
Ankeny, Delmar Henry.....Laurel
Anthony, Edgar Tribble.....Lexington

Asendorf, Bernhardt Herman ..... Lincoln
Beckhoff, Alexander Henry ..... Thedford
Bellows, Otto Richard ..... Fairmont
Boydston, Earl Wiswell ..... Holdrege
Brown, William Tarbell ..... Scribner
Camp, Ray Herbert ..... Republican City
Capron, William Lawrence ..... Kanona, Kas.
Carpenter, Felix Stephen ..... Poole
Carse, John Filius ..... Omaha
Christensen, Martin Frederick ..... Superior
Coupland, John Charles ..... Elgin
Doolittle, Warren Andrew ..... North Platte
Dopp, Herbert Roscoe ..... Hickman
Dysart, Porter William ..... Eagle
Elder, Albion Brenton ..... Riverton
Ellis, David Robert ..... Creighton
Ellison, Estella May ..... University Place
Emigh, Lawrence Edwin ..... Dawson
Fowler, Dennis Cleveland ..... North Platte
French, Hallie Clarence ..... Arlington
Gates, Frederick Trumble ..... Fort Crook
Graham, Woodson ..... Gibbon
Hall, Phil Louis ..... Lincoln
Haumont, Jules Luther ..... Elton
Heim, Emerson Walter ..... Dawson
Hennies, Marie Dorothea (Mrs. Heinrich Graman) ..... Adams
Herminghaus, Ernst Herman ..... Lincoln
Hofmeyer, Franz ..... Republican City
Hunter, Paul Crary ..... Raymond
Hutchins, Charles Webster ..... Weeping Water
Isham, Agnes Anna ..... Buffalo Gap, S. D.
Johnson, Harry Herbert ..... Lyons
Junkin, Max Wallace ..... Smithfield
Junkin, Russell Joseph ..... Smithfield
Kindig, Ira Nelson ..... Holmesville
Kraxberger, Alfred Frank ..... Gothenburg
Kuska, Joseph Benjamin ..... Ohiowa
Lamp, Albert Lee ..... Inland
Lawson, Charles William ..... Inchelium, Wash.
Liebers, Otto Hugo ..... Beatrice

Luebs, Rudolph Henry . . . . . Wood River
McArdle, Le Roy Philip . . . . . Washington
Middleton, Archie Donaldson . . . . . Brady
Moseley, Thomas Wesley . . . . . Lincoln
Nelson, Clarence James . . . . . Pilger
Ollis, William Mathias . . . . . Ord
Parmenter, Ray Allen . . . . . Kenesaw
Pollard, Oren Malcom . . . . . Nehawka
Pray, John Lyman . . . . . (Deceased)
Rands, Robert Delafield . . . . . Lincoln
Rhodes, Noel Nicholson . . . . . Creighton
Richey, Charles Reen . . . . . Omaha
Ritchie, George Edgar . . . . . Rising City
Robertson, Lorn Cleveland . . . . . Iota, Louisiana
Rosenbaum, Ray . . . . . Kennard
Saul, Ralph Stanley . . . . . Superior
Schulte, William Charles . . . . . Elgin
Sjogren, Oscar Warner . . . . .
Thompson, John Pryce . . . . . Shelton
Tipton, Claude Jones . . . . . Seward
Vanskiver, John . . . . . Washington
Waite, Lisle Loren . . . . . Coleridge
White, George Allen . . . . . St. Paul
Wilcox, Walter Edward . . . . . Glenn's Ferry, Idaho
Williams, Robert Loring . . . . . University Place
Yeakle, Oscar Raymond . . . . . Fairbury
Young, Irving Snell . . . . . Havelock

**1910**

Andreas, William Claassen . . . . . Beatrice
Arnold, Ernest Charlie . . . . . Funk
Babcock, Heman Ernest . . . . . Columbus
Barrett, Howard Edward . . . . . Chadron
Booth, Sanborn Edward . . . . . Central City
Bormann, Frederick Herman . . . . . Chalco
Bull, Christian Bernhard . . . . . Elkhorn
Busch, Lloyd Albert . . . . . Orleans
Cacy, James Stewart . . . . . Albion
Campbell, Russell Eugene . . . . . Harbine
Claassen, John Jansen . . . . . Beatrice

Cone, Howard Henry ..... Hardin, Mont.
Cummins, Harry Alonzo ..... Seward
Davis, Elliott Regester ..... Holbrook
Davison, Royce Clinton ..... Fairfield
Day, Will James ..... Superior
Dysart, Thomas Fred ..... Eagle
Fausch, Henry Robert ..... Guide Rock
Fiala, Anton Bedrich ..... Howells
Fitch, Arthur De Witt ..... Atlanta
Forburger, John Casper ..... Lincoln
Forburger, Lena Marie (Mrs. F. J. Mecham) ..... Grand Island
Ford, Cyrus Grant Emerald ..... Oakland
Francis, Raymond J ..... Gibbon
Frederickson, Oscar Fred ..... Elgin
George, Leon Oric ..... Normal
Gould, Harry Garvin ..... Republican City
Harrison, Samuel Thomas ..... Havelock
Hawley, John William ..... Brock
Higgins, Charles Calvin ..... Beatrice
Hofmeyer, Herman ..... Republican City
Hood, Samuel Lloyd ..... Mondak, Mont.
Horsh, John William ..... Lincoln
Hurtt, Charles Oliver ..... Wilsonville
Hutchinson, Clyde William ..... Elgin
Isham, Russell Raymond ..... Buffalo Gap, S. Dak.
Johnson, Delmar Nobel ..... Lyons
Johnson, Roy Rex ..... Burchard
Jones, Albert Button ..... Doniphan
Kauffman, Benjamin Verne ..... Center, Colo.
Kindig, Ethel Leta (Mrs. Otto H. Liebers) ..... Beatrice
Kraxberger, Michael Edward William ..... Gothenburg
Linder, Melville Milton ..... Berwyn
Long, Grace Cornelia ..... Wakefield
Loomis, Frederick Pamerlee ..... Ord
Ludden, John Ernst ..... Lincoln
Lynn, Raymond Dennett ..... Dallas, S. Dak.
McNeel, Edwin Lawson Davenport ..... North Platte
Matson, Elmer Eugene ..... Stromsburg
Maxfield, Don Deal .....
Mills, Benjamin Harrison ..... Arnold

Monnich, Edward Jacob ..... Hooper
Morrasy, Albert Clayton ..... Lincoln
Morris, Llewelyn E ..... Carroll
Nash, Kenneth Earl ..... Benson
Nelson, Hermann Arthur ..... Oakland
Nelson, Irvin Andrew ..... Pilger
Nelson, Otto Clarence ..... Scandia, Kans.
Nye, Homer LeRoy ..... Culbertson
Pease, Harry Allen ..... Farragut, Iowa
Person, Ernest Theodore ..... Holdrege
Pierce, John Henry ..... Falls City
Rees, David ..... Carroll
Reid, Andrew Joseph ..... Pleasanton, Texas
Riggs, George Burton ..... Shubert
Ritchie, Ruth Harriet ..... Seward
Schneider, Ernest ..... Poole
Schobert, Benjamin Lyman ..... Papillion
Schoenbeck, Walter Oscar ..... Odell
Soukup, Frank S ..... Fremont
Stephenson, Ray ..... Clay Center
Studley, Russell Alger ..... Lennant, Iowa
Swanson, Edwin Clarence ..... Stromsburg
Tietze, Ernest Elem ..... Holbrook
Tully, Edith ..... Lincoln
Urban, Frank ..... Newboro
Vogel, Percy Godfrey ..... Florence
Webster, Chester Allen Arthur ..... Gibbon
Weyant, Merle Ethel ..... Lincoln
Whitmore, Ralph Brown ..... Elgin
Wilcox, Guy Emerson ..... Grant
Wilson, Mabel Agnes ..... Douglas
Wilson, Vera Bee ..... Raymond
Young, Carl Stanley ..... R. No. 4, Lincoln

**1911**

Aker, Lyman Louis ..... Harvard
Amos, Mary Leonora ..... University Place
Anderson, John ..... Omaha
Applegate, Oscar Ezra ..... Gibbon
Backlund, Theodore William ..... Stromsburg

Becker, William Frederick.....
Bern, Amy Christy.....Wahoo
Berry, Charles.....Edison
Bigelow, Del Jay.....Harrison
Bigelow, Lee Franklin.....Harrison
Bigelow, Nettie Theo.....Fairbury
Blodgett, Reuben Emery.....Beatrice
Brainard, Willis Nathaniel.....Normal
Brinkerhoff, Gilbert Earnest.....Cuba
Brown, Benjamin Frank.....Chappell
Brush, Henry Christian.....St. Libory
Carpenter, Ray Wilford.....Fontanelle
Cizek, Mary Phoebe.....Prague
Clark, Flo.....Fairbury
Cole, Frank Howard.....Loomis
Comstock, Edgar Dewitt.....Comstock
Coupe, Henry Ala.....Falls City
Davis, Joseph Raymond.....Lincoln
Davis, Melvin Dwight.....Pawnee City
Delano, Harry Calvin.....Arcadia
Demaray, Warren Gray.....Dunning
Dobson, John.....Primrose
Domingo, George M.....Weeping Water
Downing, Willard Ross.....Bee
Duff, Daniel Robert.....Pierce
Ellison, Arthur Maxwell.....University Place
Erickson, John Eric.....Funk
Ericson, Reuben.....Kress, Texas
Ford, Richard Judson.....Oakland
Gage, Vernon Lasch.....Fairbury
Goehner, William Oscar.....Seward
Griesel, Charles Adam.....University Place
Hanger, William Lunsford.....Waterloo
Hanna, Joy.....Lexington
Hanson, Linn Ford.....Concord
Hayward, William Hiram.....Kansas City, Mo.
Heiderstadt, Stewart H.....Geneva
Ireland, Fred Marshall.....Gordon
Isham, Edward Booth.....Mason, Ill.
Junkin, Gail Marie (Mrs Homer N. Otto).....Smithfield

Kelsey, Charles Lee
Krent, Percy Rolland ..... Denver, Colo.
Kjar, Albert August ..... Lexington
Knapple, George Pleasant ..... Lexington
Lauridsen, Helge ..... Mason City
Lawrence, Charles Gladus ..... Hershey
Lindstedt, Marcus Carl ..... Osceola
McCarthy, Lee James
McGee, Roy ..... Bertrand
Magill, Alice ..... Lincoln
Maish, Herbert William ..... Falls City
Marsh, Lola ..... Wisner
Mecham, Ina Rosella ..... Grand Island
Melton, Don Sigal ..... Sioux
Miller, John Louman ..... Simeon
Nelson, Carl Herbert ..... Hooper
Nixon, John ..... Homer
Ohlsen, Winnie Atunia (Mrs. A. M. Ford) ..... Oakland
Ollis, Ethel Mary ..... Ord
Osborne, Dean Horace ..... Bayard
Papez, Emma ..... South Omaha
Parks, Harrell Leonard ..... Ord
Pascoe, Mary ..... Fremont
Petring, George Kimmel ..... Nebraska City
Posson, Rutherford Jay ..... Eureka
Richey, Harry Wyatt ..... Omaha
Roberts, Arthur Lester ..... Joy
Robinson, Jay ..... Poole
Rogge, Willis ..... Sterling
Rolofson, Lawrence Owen
Sindt, Henry ..... Naponee
Sindt, Karl ..... Naponee
Stoddart, Paxton Calladay ..... McFarland, Wis.
Streitz, William Michael ..... Millard
Strope, Merwin Garvin ..... Venus
Strope, William Wallace ..... Venus
Swanson, Archibald Carl ..... Aurora
Taylor, Leonard Burke ..... Omaha
Tupper, Oscar Winters ..... Riverton
Tyson, Edwin ..... Mound City, Mo.

Wentz, Harry Maurice ..... Lincoln
Whisenand, Wilmer James ..... Harvard
Wilcox, Frank Luther ..... Arborville
Wittmann, Robert Joseph ..... Lincoln

1912

Adams, Orra Scott ..... Venus
Beebe, Henry Curtis ..... North Bend
Bern, Carl Elmer ..... Wahoo
Boslaw, Frances ..... University Place
Campbell, Arthur Webster ..... Bethany
Coupland, William Cressy ..... Elgin
Croft, Paul Harry ..... Fairfield
Delano, Lois Elsie ..... Lincoln
Fishback, Ethel Grace ..... Beatrice
Ford, Edna Euphenia ..... Oakland
Gage, James Wendell ..... Fairbury
Gingrich, Fred Jacob ..... Aurora
Goffe, Jay Emory ..... University Place
Graff, Raymond Chester ..... Bancroft
Hansen, Veda Laurenza ..... Archer
Hill, Charles William ..... Ithaca
Hillis, Richard Gilbert ..... Aurora
Hoch, Edwin Franklin ..... Lincoln
Huston, Harry Edwin ..... Brock
Johnson, Gladys ..... Pawnee City
Johnson, Herbert Lewis ..... North Loup
Johnson, Roy Chester ..... Lyons
Johnston, Forrest Raymond ..... Douglas
Jones, Arian Hempel ..... Loup City
Jones, Henry Albert ..... Seward
Jones, William Thomas ..... Andrews
Keuten, Diedrich ..... Harbine
Kindig, Albert Sidney ..... Holmesville
Layton, Iva Marie ..... University Place
Liebers, Hedwig Antonia (Mrs. Max Junkin) ..... Minden
Lindberg, Frederick Wilhelm ..... O'Neill
Lindburg, Elinor Spurgeon ..... Polk
Luckey, Hattie Franke ..... University Place
Lynn, Laura Marie ..... Minden

McCarthy, Joseph Thomas.....Spalding
McDonald, Allen Herbert.....Geneva
Major, Alfrod Monroe.....Tekamah
Marshall, Leila Fern.....
Miller, John Louman.....Simeon
Moore, Robert Leo.....Decatur
Nelson, Edwin Clark.....Superior
Novotny, Jaroslav.....Clarkson
Ollis, Ruth Eleanor.....Ord
Otto, Homer N.....Aurora
Otto, Roy Basting.....Aurora
Paulus, Frederick William.....Inland
Philipsen, Moldt Henry.....Hickman
Pickering, John Philip.....Steele City
Ring, Susannah.....Cheney
Roy, Edwin Earl.....Lincoln
Schoenbeck, Helen Mary.....Odell
Sell, Albert Emil.....Milford
Sjogren, John Wilhelm.....Funk
Smith, Charles Ray.....Trenton
Snyder, Russell Charles.....Loup City
Swanson, Philbert Oscar.....Funk
Thompson, Benjamin Harrison.....Riverton
Thrapp, Elmo Edward.....Ulysses
Trotter, Harley Elijah.....Spalding
Zeller, Florence Lucile.....Sioux City, Iowa

**1913**

Armstrong, Charles Marion.....Greenwood
Bennison, Sam.....Lincoln
Blanchard, Floyd Orvil.....Friend
Bovey, John Royal.....Crete
Bowman, Hazel Mae.....Alliance
Brouse, Edgar Merl.....Stratton
Brown, Ora Clayton.....Carleton
Chase, Linus.....Pawnee City
Day, Edna Belle.....Superior
Day, Henry Robert.....Superior
Eaton, Alma Dorcas (Mrs. Dewey Harmon).....Lincoln
Fuerst, Louise Henrietta.....Omaha

Gifford, Lois Mahala ..... Lincoln
Gramlich, Fred William ..... Fort Crook
Harding, John Edwin ..... South Omaha
Hayward, Alice Benjamine ..... Lincoln
Koester, Sophia Dorothea ..... Weeping Water
Larsen, Frances ..... St. Paul
Lehmkuhl, Lloyd Henry ..... Weston
Liebers, Anna Otilia ..... Minden
McConnell, Abigail Mary ..... St. Paul
Maloy, Madge ..... Omaha
Maloy, Mayme ..... Omaha
Mattock, Earl James ..... Bladen
Meese, Dorothy Frances ..... Lincoln
Monnich, Delia Amanda ..... Hooper
Nicholas, Harry ..... Stanton
Pearce, Sidney ..... Lincoln
Petring, Katherine ..... Nebraska City
Pettett, Frank Andrew ..... Elm Creek
Phillipsen, Victor Reuben ..... Holbrook
Pollard, Hall Addison ..... Nehawka
Post, Verner William ..... Stratton
Rice, William Gramlich ..... Bridgeton, N. J.
Roe, Benjamin Cattle ..... Omaha
Rogers, Wilber Anthony ..... Ord
Rydberg, Carl Milton ..... Wood River
Safford, Frank Edward ..... Waterloo
Shepherd, Joseph Benjamin ..... Dallas, Ore.
Shroyer, George Andrew ..... Grafton
Skudrna, Anton William ..... San Pierre, Ind.
Steadman, Joseph Robert ..... Stella
Stenger, Emma Elizabeth ..... St. Paul
Thomas, Helen Louise (Mrs. Charles Barrett) ..... Lincoln
Ward, Wylie Ray ..... Overton
Whitmore, Roland Monroe ..... Elgin
Wilkens, Carl William ..... DeWitt
Wood, Fannie Lyon ..... Lincoln
Yates, Della May ..... Geneva
Yensen, Joseph Harden ..... Lowell

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1916/17
Univ. of Nebraska Agriculture 1916-17

Series XXI No. 9

# Bulletin of The University of Nebraska

## ANNUAL CATALOG

OF THE

## COLLEGE OF AGRICULTURE

### ANNOUNCEMENT
### 1916-17

UNIVERSITY OF ILLINOIS LIBRARY
JUN 1916

Published by the University April 21, 1916
LINCOLN, NEBRASKA

The Bulletin of the University of Nebraska is published monthly in February, semi-monthly in March, semi-weekly in April and monthly in May and November of each year by the University of Nebraska. Entered at the Post-Office at Lincoln, Nebraska, as second-class matter under Act of Congress July 16, 1894.

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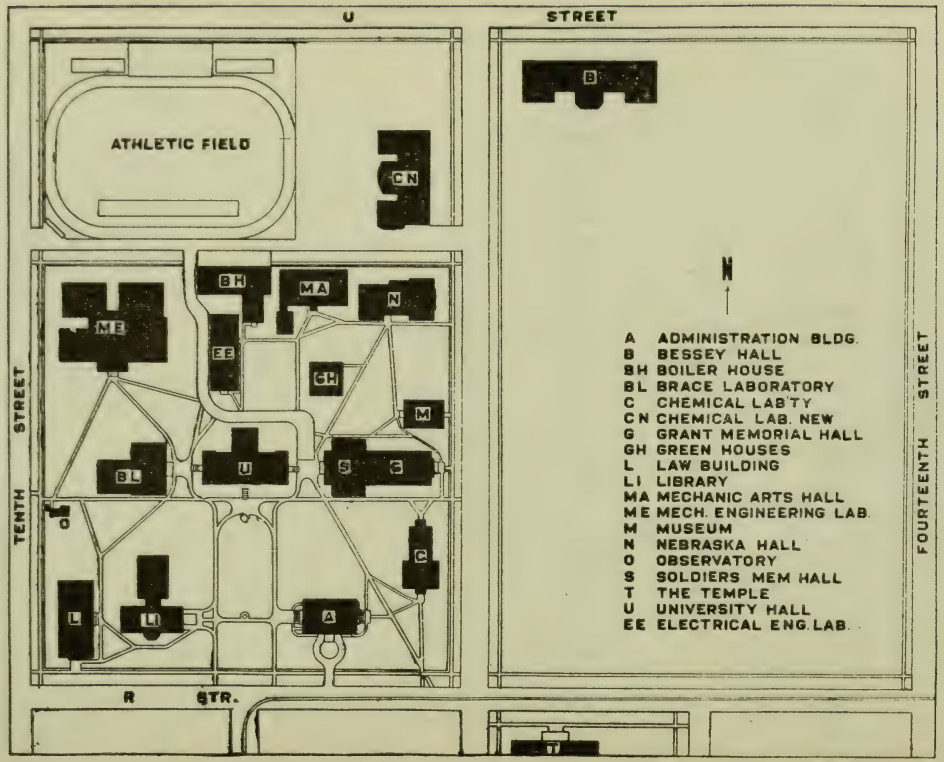
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BH BOILER HOUSE
BL BRACE LABORATORY
C CHEMICAL LAB'TY
CN CHEMICAL LAB. NEW
G GRANT MEMORIAL HALL
GH GREEN HOUSES
L LAW BUILDING
LI LIBRARY
MA MECHANIC ARTS HALL
ME MECH. ENGINEERING LAB.
M MUSEUM
N NEBRASKA HALL
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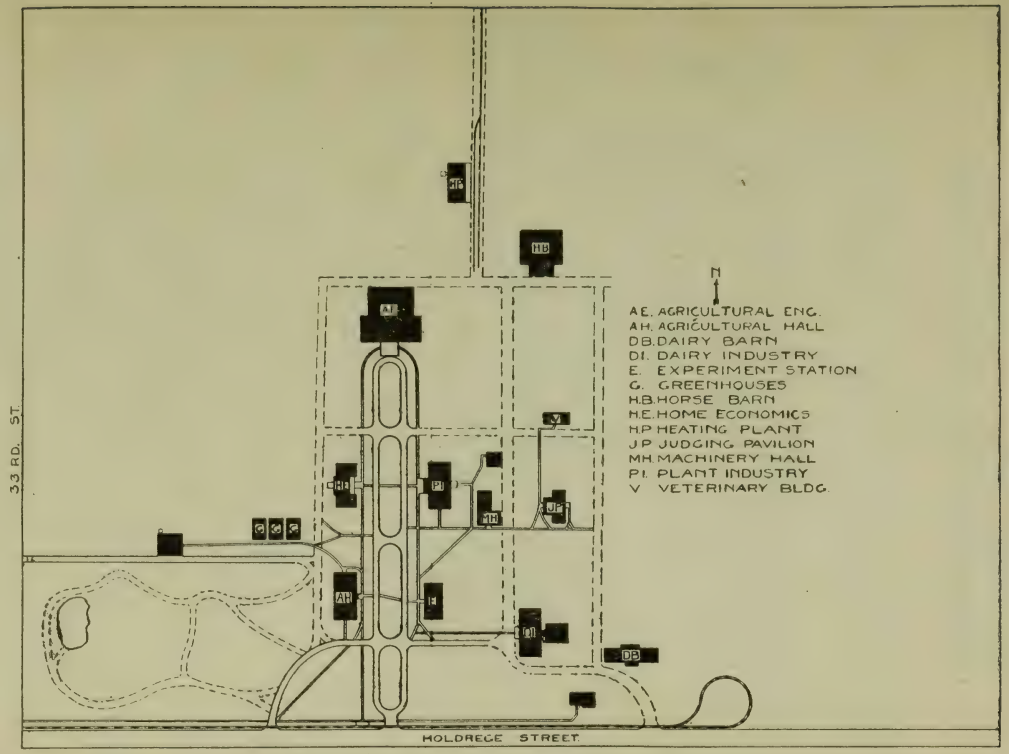
EE ELECTRICAL ENG. LAB.

CITY CAMPUS




UNIVERSITY FARM CAMPUS

**The College of Agriculture** offers courses to all graduates of accredited high schools. Graduates of such a course should apply for entrance to the College and not to the School of Agriculture. A new agricultural group (the Agricultural Practice Group) is now offered for students who can spend but two years at the college of Agriculture. This College opens on September 13, 1916, and all students should present themselves for admission at that time.

**The School of Agriculture** (a secondary school of the College of Agriculture) is a high school in which agriculture is given special emphasis. Students from the farms or without sufficient high school credit to enter the College may enter this school. Graduation from this school does not lead to a degree, but courses are offered intended to specially qualify young men for practical farmers and young women for efficient home keepers. This course is not offered as a substitute for a college course, but as a substitute for a regular high school course. The year opens October 11, 1916, and those wishing to enter the school should present themselves at that time.

A separate catalog is issued for the four-year course in the School of Agriculture.

For further information, write to the Dean of the College of Agriculture, University Farm, Lincoln.

## COLLEGES AND SCHOOLS OF THE UNIVERSITY

The University of Nebraska comprises the following colleges and schools:

The Graduate College, including the Graduate School of Education
The College of Arts and Sciences, including the Schools of Commerce and Fine Arts
The Teachers College, including the Teachers College High School
The College of Engineering
The College of Agriculture, including the Schools of Agriculture
The College of Law
The College of Medicine
The College of Pharmacy

The Nebraska Agricultural Experiment Station, the Agricultural School of Agriculture at Curtis, the Experimental Substations at North Platte, Valentine and Scottsbluff and the Agricultural Extension Service are under the supervision of the Board of Regents of the University.

For separate catalogs or information regarding any of the above colleges or schools, address

THE REGISTRAR,
THE UNIVERSITY OF NEBRASKA,
Lincoln, Nebraska.

## THE UNIVERSITY YEAR

The regular session of the University embraces thirty-nine weeks beginning the second Wednesday after the first Monday in September, and is divided into a first and a second semester. A summer session of eight weeks immediately follows the close of the second semester class work. Instruction is offered from September to August.

To enter any session, one must be able either to present the minimum admission requirements to the University or to meet the conditions for "Adult Special" registration.

## CALENDAR FOR THE COLLEGE OF AGRICULTURE

| | | |
|---|---|---|
| **1916** | | |
| September 11-16 | Monday-Saturday | Entrance examinations |
| September 13-16 | Wednesday-Saturday | First semester registration |
| September 16 | Saturday, 8 p. m. | University reception to all students |
| September 19 | Tuesday, 11 a. m. | Opening address by the Chancellor |
| [1]October 11 | Wednesday | School of Agriculture fiirst semester begins |
| November 28 | Tuesday, 6 p. m. | Thanksgiving recess begins |
| December 2 | Saturday, 12 m. | Thanksgiving recess ends |
| December 12 | Tuesday | Regular meeting of the Board of Regents |
| December 19 | Tuesday, 6 p. m. | Christmas recess begins |
| **1917** | | |
| January 2 | Tuesday | School of Agriculture, winter short couse begins |
| January 3 | Wednesday, 8 a. m. | Christmas recess ends |
| January 22 | Monday | School of Agriculture second semester begins |
| Jan. 27-Feb. 3 | Saturday-Saturday | First semester examinations |
| Jan. 27-Feb. 3 | Saturday-Saturday | Entrance examination |
| Jan. 31-Feb. 3 | Wednesday-Saturday | Second semester registration |
| February 5 | Monday | Second semester classes begin |
| February 15 | Thursday | Charter day. Regular meeting of the Board of Regents. Twenty-first Annual Mid-winter Commencement |
| March 31 | Saturday, 12 m. | Spring recess begins |
| April 7 | Saturday, 12 m. | Spring recess ends |
| April 10 | Tuesday | Regular meeting of the Board of Regents |
| April 20 | Friday | School of Agriculture Commencement |
| June 2-9 | Saturday-Saturday | Second semester examinations |
| **Commencement Week** | | |
| June 10 | Sunday | Baccalaureate sermon |
| June 11 | Monday, 10 a. m. | Final recommendation for degrees by faculties |
| June 11-12 | Monday-Tuesday | Class Day. Alumni Day |
| June 12 | Tuesday | Regular meeting of the Board of Regents |
| June 13 | Wednesday | Forty-sixth Annual Commencement |
| **Summer Session 1917** | | |
| June 11 | Monday | Summer Session begins |
| June 15-16 | Friday-Saturday | Registration, Summer Session |
| August 3 | Friday, 8 p. m. | Eleventh Annual Summer Session Commencement |
| **1917-1918** | | |
| September 12 | Wednesday | First semester begins( 1917-1918) |

[1]A separate bulletin is published of the four-year course in the School of Agriculture.

## OFFICERS OF ADMINISTRATION AND INSTRUCTION

SAMUEL AVERY, Ph. D., LL. D., Chancellor of the University.

EDGAR ALBERT BURNETT, B. Sc., Dean of the College of Agriculture, Director of the Nebraska Experiment Station and Professor of Animal Husbandry. (*Head of Department of Animal Husbandry.*) Agricultural Hall 203.

VANCIL KELSO GREER, LL. B., Registrar and University Publisher. (*Secretary of the Faculties.*) Administration Hall 103.

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CHARLES WILLIAM PUGSLEY, B. Sc., Director of Extension Service in the College of Agriculture. Agricultural Hall 302.

LAWRENCE BRUNER, B. Sc., Professor of Entomology and State Entomologist. (*Head of Department of Entomology.*) Plant Industry Hall 208.

EDWIN MEAD WILCOX, Ph. D., Professor of Agricultural Botany and Botanist of the Experiment Station. (*Head of Department of Agricultural Botany.*) Plant Industry Hall 304.

LEON WILSON CHASE, M. E., A. E., Professor of Agricultural Engineering. (*Head of Department of Agricultural Engineering.*) Agricultural Engineering Annex.

JULIUS HERMAN FRANDSEN, M. S. A., Professor of Dairy Husbandry. (*Head of Department of Dairy Husbandry.*) Dairy Industry Hall.

HARRY ELWYN BRADFORD, A. B., Principal of the School of Agriculture and Professor of Secondary Agricultural Education. (*Head of Department of Secondary Agricultural Education.*) Agricultural Hall 207.

GEORGE EVERT CONDRA, Ph. D., Professor of Geography and Conservation. (*Head of Department of Geography and Conservation.*) Director, State Conservation and Soil Survey. University Hall 311.

ALICE MARIE LOOMIS, A. M., Professor of Home Economics. (*Head of Department of Home Economics.*) Home Economics Hall.

WILLIAM PATTON SNYDER, M. S., Superintendent of Experimental Substation, North Platte.

JAMES HARRISON GAIN, M. D. C., Professor of Animal Pathology. (*Head of Department of Animal Pathology.*) Veterinary Hall.

SAMUEL MINTER PARKER, First Lieutenant of Infantry, U. S. Army, Commandant of Cadets and Professor of Military Science and Tactics. (*Head of Department of Military Science and Tactics.*)

FRED WILBERT UPSON, Ph. D., Professor of Agricultural Chemistry. (*Head of Department of Agricultural Chemistry.*) Experiment Station Hall.

HORACE CLYDE FILLEY, A. M., Professor of Farm Management. (*Head of Department of Farm Management.*) Agricultural Hall 307.

ROBERT FRANCIS HOWARD, A. M., Professor of Horticulture. (*Head of Department of Horticulture.*) Plant Industry Hall 105.

WILLIAM WESLEY BURR, B. Sc., Professor of Agronomy. (*Head of Department of Agronomy.*)

THEODORE ALEXANDER KIESSELBACH, A. M., Professor of Agronomy (Experimental). Plant Industry Hall 202.

GEORGE ANDREW LOVELAND, A. M., LL. B., Professor of Meteorology and Section Director United States Weather Bureau. Brace Laboratory.

CYRUS VANCE WILLIAMS, A. M., Superintendent of the Nebraska School of Agriculture, Curtis.

MYRON HARMON SWENK, A. M., Professor of Economic Entomology and Assistant State Entomologist. Plant Industry Hall 206.

HOWARD JOHN GRAMLICH, B. Sc., Professor of Animal Husbandry. Agricultural Hall 103.

CHARLES BOPES LEE, A. M., Professor of Animal Husbandry. Agricultural Hall 103.

ERWIN HOPT, B. Sc., Professor of Agronomy. Stock Judging Pavilion 204.

LAZELLE BRANTLY STURDEVANT, A. M., M. D., Associate Professor of Animal Pathology. Veterinary Hall.

NELS AUGUST BENGTSON, A. M., Associate Professor of Geography and Conservation. University Hall 308.

GEORGE WILLIAM HOOD, M. S. H., Associate Professor of Horticulture. Plant Industry Hall 102.

[1]GEORGE KONRAD KARL LINK, Ph. D., Associate Professor of Agricultural Botany. Plant Industry Hall 304.

[1] Absent on leave.

HARLEY MARTIN PLUM, Ph. D., Associate Professor of Agricultural Chemistry. Experiment Station Hall.

LAURENCE FROYD SEATON, B. Sc. in M. E., Associate Professor of Agricultural Engineering. Machinery Hall.

JOHN RALPH COOPER, B. Sc., Associate Professor of Horticulture. Plant Industry Hall 102.

EDWIN GARVER WOODWARD, A. M., Associate Professor of Dairy Husbandry. Dairy Industry Hall.

ELMER EUGENE BRACKETT, B. Sc. in E. E., Associate Professor of Agricultural Engineering. Machinery Hall.

ARTHUR EUGENE ANDERSON, A. B., State Leader in charge of County Agent Work. (*Extension Service in cooperation with U. S. Department of Agriculture.*) Agricultural Hall 301.

HULDAH PETERSON, State Leader in charge of Boys' and Girls' Club Work. (*Extension Service in cooperation with U. S. Department of Agriculture.*) Agricultural Hall 301.

SIMON WAYNE ALFORD, D. V. S., Superintendent of the Serum Plant.

HORACE JAMES YOUNG, B. Sc. in Agr., Assistant Professor of Agronomy (Soils). Experiment Station Hall.

JOHN WILLARD CALVIN, B. Sc., Assistant Professor of Agricultural Chemistry. Experiment Station Hall.

HELEN LEE DAVIS, A. B., B. Sc., Assistant Professor of Home Economics (Domestic Art). Home Economics Hall.

ALVA ALDUS BAER, A. B., Assistant Professor of Agricultural Engineering. Machinery Hall.

JOHN ANDERSON RATCLIFF, M. A., Assistant Professor of Agronomy (Experimental). Plant Industry Hall 202.

ERNEST HERMAN HOPPERT, B. Sc., Assistant Professor of Horticulture (Extension Service). Plant Industry Hall 102.

JULIA VANCE, A. B., B. Sc., Assistant Professor of Home Economics. Home Economics Hall.

TELL WILLIAM NICOLET, M. L. A., Assistant Professor of Horticulture (Forestry and Landscape Gardening). Plant Industry Hall 105.

MATTHEW ELLIS DICKSON, B. Sc., Assistant Professor of Poultry Husbandry. (In charge.) Agricultural Hall 205.

JULIA EMELINE LOUGHRIDGE, A. B., Assistant Principal of the School of Agriculture and Assistant Professor of Mathematics in the School of Agriculture. Agricultural Hall 207.

FLORA BULLOCK, A. M., Assistant Professor of English in the School of Agriculture. Agricultural Hall 109.

MARY VIRGINIA ZIMMER, A. B., Assistant Professor of Mathematics in the School of Agriculture. Agricultural Hall 207.

IVAN DALEY WOOD, A. M., Assistant Professor of Agricultural Engineering. (Extension Service.) Machinery Hall.

HARVEY ELMER VASEY, A. M., Assistant Professor of Agricultural Botany. Plant Industry Hall 313.

HOBART FLOYD WILLIAMS, B. Sc., Assistant Professor of Farm Management in charge of Farm Management Surveys. (*Extension Service in cooperation with the U. S. Department of Agriculture.*) Agricultural Hall 307.

MAUD MATHES WILSON, B. Sc., Assistant Professor of Home Economics. (*In charge of Home Economics in Extension Service.*)Agricultural Hall 301.

DAVIS HENRY PROPPS, B. Sc., Assistant Professor of Dairy Husbandry. (*Extension Service in cooperation with the U. S. Department of Agriculture.*) Dairy Industry Hall.

KENNETH FISHER WARNER, A. M., Assistant Professor of Animal Husbandry. (Extension Service.) Agricultural Hall 104.

PORTER L. GADDIS, A. B., Assistant Professor of Agronomy. (Extension Service.) Plant Industry Hall 202.

RALPH WARD DAWSON, B. Sc., Assistant Professor of Entomology. Plant Industry Hall 203.

HAROLD BROCKWAY PIER, B. Sc., Assistant Professor of Animal Husbandry. Agricultural Hall 104.

FRANKLIN DAVID KEIM, B. Sc., Assistant Professor of Agronomy (Crops). Stock Judging Pavilion 204.

RUSSELL RICHARD SPAFFORD, B. Sc., Assistant Professor of Farm Management Surveys. (*Extension Service in cooperation with the U. S. Department of Agriculture.*) Agricultural Hall 307.

FRANK CLIFFORD DEAN, A. B., Agricultural Editor. Agricultural Hall 204.

LEWELLYN TERRY SKINNER, B. Sc., Assistant in Boys' and Girls' Clubs. (*Extension Service in cooperation with the U. S. Department of Agriculture.*) Agricultural Hall 301.

EMMA REED DAVISSON, Assistant in Home Economics, in charge of Women's Clubs. Agricultural Hall 301.

CHARLES ALTON HELM, A. M., Instructor in Agronomy (Experimental). Plant Industry Hall 202.

MARY-ELLEN BROWN, B. Sc., Instructor in Home Economics. Home Economics Hall.

CLARE BROWN CORNELL, A. M., Instructor of Cadet Band.

MARGARET S. FEDDE, A. B., Instructor in Home Economics. Home Economics Hall.

MARY STANDERVICK VAN KIRK, Instructor in Home Economics. Home Economics Hall.

ESTHER WARNER, A. B., Instructor in Home Economics. Home Economics Hall.

EARL GEORGE MAXWELL, A. M., Instructor in Dairy Husbandry. Dairy Industry Hall.

THEODORE THORSON, B. Sc., Instructor in Dairy Husbandry. Dairy Industry Hall.

OSCAR WARNER SJOGREN, B. Sc. in A. E., Instructor in Agricultural Engineering. Agricultural Engineering Annex.

ELMER LAMONT RHODES, B. Sc., Instructor in Farm Management.

DELLA MARIE CLARK, A. B., Instructor in Physical Education.

MARY ANN ROKAHR, A. B., Instructor in Home Economics. (Extension Service.) Agricultural Hall 301.

EMMA ORT, B. Sc., Instructor in Home Economics. (Extension Service.) Agricultural Hall 301.

GLAIDETH GAINEVERE DENNY, A. B., Instructor in German and History in the School of Agriculture. Agricultural Hall 304.

EDITH VIOLET OHLSEN, B. Sc., Instructor in Home Economics in the School of Agriculture. Home Economics Hall.

CHAUNCEY WILLIAM SMITH, B. Sc., Instructor in Physics in the School of Agriculture. Experiment Station Hall.

JOHN GIFFORD McMILLAN, B. Sc., Assistant in Boys' and Girls' Clubs. (*Extension Service in cooperation with the U. S. Department of Agriculture.*) Agricultural Hall 301.

LEILA F. CORBIN, Instructor in Home Economics. (*Assistant to the Dean of Women, School of Agriculture.*) Home Economics Hall.

RUTH ODELL, A. B., Instructor in English and History in the School of Agriculture. Agricultural Hall 205.

ESTHER S. ANDERSON, B. Sc., Instructor in Geography in the School of Agriculture. Agricultural Hall 207.

EDNA CLARA NOBLE, B. L., Library Assistant in charge of University Farm Library. Agricultural Hall.

ASTRED ALTHEA KJELSON, Assistant in Home Economics in the School of Agriculture. Home Economics Hall.

LETA BLANCHE LINCH, A. B., Assistant in Home Economics in the School of Agriculture. Home Economics Hall.

MAMIE MEREDITH, A. B., Assistant in English and History in the School of Agriculture. Agricultural Hall 205.

ARTHUR CLYDE NORTH, B. Sc., Assistant in Dairy Husbandry. Dairy Industry Hall.

HOWARD NOTSON COLMAN, B. Sc., Assistant in Dairy Husbandry. (*In charge of official testing in cooperation with the U. S. Department of Agriculture.*) Dairy Industry Hall.

ESTELLA MAY ELLISON, Assistant in Home Economics in the School of Agriculture. Home Economics Hall.

SARAH LOUISE VINING, Supervisor of Cafeteria. Home Economics Hall.

JAMES COWAN, M. E., Superintendent Experimental Substation, Valentine.

FRITZ KNORR, B. Sc., Superintendent Experimental Substation, Mitchell.

SENATOR WILLIS PERIN, Farm Superintendent. Agricultural Hall 205.

### County Agents

OTTO HUGO LIEBERS, B. Sc., Gage County, Beatrice.
ALEXANDER HENRY BECKHOFF, B. Sc., Dakota County, Hubbard.
GEORGE OVERTON UNRUH, B. Sc., Dawes County, Chadron.
ARTHUR GREY GEORGE, B. Sc., Madison County, Battle Creek.
ROBERT ELLSWORTH HOLLAND, B. Sc., Kimball County, Kimball.
CHARLES ELLSWORTH GUNNELS, B. Sc., Seward County, Seward.
F. M. SEIDELL, Box Butte County, Alliance.
RAY HERBERT CAMP, B. Sc., Thurston County, Walthill.
ARTHUR CLYDE NORTH, B. Sc., Sheridan County.

### Fellows, Scholars, and Graduate Assistants

WILLIAM E. ANDERSON, B. Sc., Assistant in Agricultural Chemistry (Dairy). Experiment Station Hall.
HARRY T. BENNETT, B. Sc., Assistant in Agricultural Chemistry. Experiment Station Hall.
REUBEN G. HUFFMAN, B. Sc., Assistant in Agricultural Chemistry. Experiment Station Hall.
MARY ANNA SCHULTE, A. M., Scholar in Agricultural Botany. Plant Industry Hall.
CURRY WATHAM WATSON, Assistant in Farm Management.

## STANDING COMMITTEES OF THE FACULTY

Course of Study—Professor Bradford (chairman), Professors Bruner, Wilcox, Chase, Frandsen, Loomis, Howard, Bengtson, Upson, the Dean.
Schedule of Classes—Professor Chase (chairman), Professors Bradford, Loughridge, the Registrar.
Advanced Standing—The Chancellor (chairman), the Dean, and the Inspector of High Schools.
Student Activities—Professor Frandsen (chairman), Professors Wilcox, Howard, Lee, Loomis, Graham, Hopt.

## PURPOSE OF THE COLLEGE OF AGRICULTURE

The College of Agriculture was established by an act of the legislature of 1909, reorganizing the colleges within the University. The purpose of this college is (1) to provide thoro instruction in the technical agricultural sciences, (2) to aid in the promotion of agriculture thru its secondary Schools of Agriculture, its Experiment Stations, and its Agricultural Extension work, and (3) to promote household arts thru its department of Home Economics.

## GROUPS OF STUDY

The **General Agricultural Group** meets the needs of those students who wish to prepare themselves for the pursuit of scientific investigation along some line of agriculture, such as agricultural botany, agricultural chemistry, agronomy, animal husbandry, animal pathology, dairy husbandry, entomology, horticulture, and other technical subjects related thereto. This group should also appeal to those who desire to prepare themselves for teaching in high schools or in agricultural colleges and who desire agricultural training to meet the demands of the schools requiring that instruction be given in agriculture. As a course in general education for students who expect to follow business pursuits or to continue still further the study of some technical agricultural subject, this course is offered as a suitable foundation.

The **Agricultural Practice Group** (a two-year course leading to a certificate of proficiency in agriculture upon completion).

This course is intended to meet the need of those students who desire to return to the farm and who can spend only two years in college work. The course is almost wholly a study of practical agriculture.

The student may register in the five principal agricultural departments during his first term in college and may continue this practical work thru the entire two years.

At the end of two years a certificate will be granted for proficiency in practical agriculture, upon satisfying the requirements of proficiency in practical farm experience.

Should the student desire to continue in college more than two years, he must then enter the General Agricultural Group and complete the science requirements before continuing in his agricultural subjects.

Persons choosing the Agricultural Practice Group will find it to their advantage to live near the University Farm, since all of this work will be offered at the Farm campus. The student will not be required to go to

the City campus for any work except for registration at the beginning of the semester.

The **Home Economics Group** leads to the degree of Bachelor of Science in Home Economics. Besides those subjects which have to do especially with the home, it includes studies in science, language, history, and other branches affording a good general education. This department is housed in Home Economics Hall, situated on the University Farm. The hall is a three-story brick building, equipped to provide practical instruction in cooking, sewing, and house management.

## FACILITIES FOR INSTRUCTION

To illustrate properly the work in the various departments in agriculture, the college is provided with a farm of 320 acres which is used for experimental purposes and to illustrate methods in farm practice, showing the effect of rotations and methods of treatment on the physical and chemical properties of the soil and on its productiveness. The department of Horticulture maintains an extensive orchard and garden for demonstrating horticultural methods and practices. The departments of Animal Husbandry and Dairy Husbandry keep extensive herds for instruction in types of farm animals. The agricultural plant, aside from lands, consists of eight main buildings and several barns and accessory buildings to complete the work and efficiency of the plant. Agricultural Hall is used for administration, library, and general classrooms. Experiment Station Hall furnishes laboratories for Soils, Physics, and Agricultural Chemistry. The Judging Pavilion furnishes stock judging laboratories and grain judging laboratories, with exceptional facilities for work. Agricultural Engineering Hall furnishes laboratories in forge work, wood work, farm machinery, farm motors, rural architecture, automobiles, concrete work, and domestic engineering. Plant Industry Hall furnishes class and laboratory facilities for Horticulture, Entomology, Agricultural Botany and Experimental Agronomy. Dairy Industry Hall furnishes laboratories for instruction in buttermaking and cheesemaking, market milk and ice cream laboratories, supplemented by a herd of exceptional efficiency to demonstrate the best dairy practice. Home Economics Hall furnishes laboratories for instruction in the preparation of food, and in clothing and home furnishing. All of the technical departments giving instruction have excellent laboratory facilities and depend upon the laboratory method to give definiteness and efficiency to their instruction.

# ADMISSION TO THE COLLEGE OF AGRICULTURE

*Credentials which are accepted toward admission to the University become the property of the University and are kept permanently in the files. All credentials must be filed with the Registrar. They should be mailed at least two months before the beginning of any semester or session to insure prompt attention. Attention to this request will save applicants much inconvenience.*

Admission to the University is gained only thru matriculation in one of the eight colleges, (the three schools are included in the colleges).

Admission may be (1) to freshman standing, (2) to advanced standing, and (3) as adult special students.

## ADMISSION TO FRESHMAN STANDING.

### General Agriculture and Home Economics Groups

Admission to freshman standing may be (1) *complete*, meeting all requirements of the College, or (2) *conditional*, deficient in required subjects. For complete admission applicants must present 30 entrance points, for conditional admission a minimum of 28 entrance points, from one of the approved sources given below under, "Admission by Certificate", and in the subjects for the amount indicated below under, "Entrance Subjects".

### Agricultural Practice Group

Admission to the Agricultural Practice Group is the same as for the other groups except that foreign language is not required.

An *entrance point* is given for the work of a class holding five recitations a week, of 40 to 50 minutes each, for at least eighteen weeks. In laboratory courses an entrance point is given for three recitations and two double periods of laboratory work (under the supervision of a competent instructor) each week for at least eighteen weeks. In laboratory courses without recitation, an entrance point is the equivalent of fifteen single periods each week.

Students admitted conditionally must remove the conditions at the earliest possible opportunity. Degrees will not be granted until such conditions are removed.

Entrance credit, in addition to that presented when admission is granted, to be accepted must be submitted within one year from date of matriculation.

College credit is given for work done in a secondary school only upon examination and then for a maximum of nine hours[1] and only in chemistry, Greek, mechanical drawing, solid geometry, trigonometry, third and fourth year German, French and Latin, and fourth year English. To receive college credit for such work, application must be made at the time of first registration in the University and the examination must be taken by the end of the first semester.

Applicants for admission to freshman standing may be admitted (1) *by certificate* and (2) *by examination.*

### Admission by Certificate

Admission may be had by certificate (a) from the secondary schools on the accredited list of the University and (b) from the secondary schools which are members of the North Central Association of Colleges and Secondary Schools, and of Accrediting Associations of equal rank.

*Applicants, who are graduates from secondary schools accredited to the University,* must file their "entrance cards" with the Registrar or indicate the name of the school and the year of graduation when applying for admission.

*Applicants, who are not graduates from secondary schools accredited to the University,* must secure from the Superintendent or Principal an official certified statement of record showing the length of time of attendance, and for each course, the length of the course in weeks, the number of recitations per week, the length of recitation and the grade secured and also a recommendation from such Superintendent or Principal that the applicant be admitted before graduation from the high school and file the same with the Registrar.

*Applicants from secondary schools which are members of the North Central Association of Colleges and Secondary Schools, and of Accrediting Associations of equal rank* must secure an official certified statement of record showing the length of time of attendance, and for each course the length of the course in weeks, the number of recitations per week, the length of recitations and the grade secured and also whether or not the applicant is a graduate and file the same with the Registrar.

*Applicants for admission to the College of Agriculture as graduates of the*

[1] An "hour" is given for each one hour recitation or lecture which presupposes two hours of preparation, or for the equivalent of a three hour laboratory period during each of the eighteen weeks of a semester.

*University Preparatory Course of the School of Agriculture* must secure from the Principal of the School of Agriculture an official certified statement of record and file the same with the Registrar. The above named applicants are admitted to complete freshman standing in the College of Agriculture without examination.

### Admission by Examination

All applicants other than those stated above for admission to the University are required to take entrance examinations. Entrance examinations are offered by the High School Inspector during the entire week in which registration occurs at the beginning of each semester.

### Entrance Subjects

The 30 entrance points required for complete admission to freshman standing and the 28 entrance points required for conditional admission to freshman standing, must be presented in the following subjects for the amount indicated; the time element as indicated above in the definition of an *entrance point* is essential.:

| Required Subjects | Points |
|---|---|
| English | 4 |
| History (European) (a) | 2 |
| Language (foreign) (b) 6 to 4 | 10 [or 8 (b)] |
| Mathematics (algebra and geometry) (b) 4 to 6 | |
| Science (laboratory) (c) | 2 [or 4 (b)] |
| **Elective Subjects** | |
| Other subjects taught in an approved manner in an accredited secondary school | 12 |
| Total | 30 |

(a) History—
It is recommended that Greek and Roman history be offered in meeting the European history requirement.

(b) Language and mathematics—
Ten points of foreign language and mathematics are required with a minimum of four points in either. But a second year of laboratory science may be offered in place of a third year of foreign language. Foreign language is not required for entrance to the two year Agricultural Practice Group.

(c) Science—
For admission to this College both physics and chemistry are desirable, but either a full year of physics or of chemistry should be offered. Students offering only a half year of either cannot continue their study in the College without registering for the elementary course. A second year of laboratory science may be offered in place of a third year of foreign language.

## ADMISSION TO ADVANCED STANDING

Applicants for admission from other universities or colleges must file with the Registrar (1) *a letter of honorable dismissal;* (2) *an official certified statement of the college work already accomplished* showing the length of time of attendance and for each course the length of the course in weeks, the number of recitations or lectures per week, the length of the recitation or lecture, if a laboratory course the amount of time in laboratory per week and the grade secured, accompanying the same with a marked catalog of the institution in which it was done; (3) *an official certified statement of the record of secondary school work* showing the length of time of attendance, and for each course the length of the course in weeks, the number of recitations per week, the length of recitation and the grade secured, satisfying the admission requirements of that college of the University which the applicant seeks to enter.

Applicants for admission to advanced standing are of two classes: (1) those entering from universities and colleges whose requirements for admission and graduation are equal to those of this University, who are given full credit in this University in so far as their work applies not to exceed senior standing; (2) those entering from colleges whose requirements for admission and graduation are not equal to those of this University, who are given less than full credit in proportion to the rank of the institution from which they enter.

In every instance a student shall complete in residence and in the senior year at least thirty of the one hundred and twenty-five hours required for graduation.

Advanced credit, in addition to that presented when admission is granted, to be accepted must be submitted for approval within one year from date of matriculation.

## ADMISSION AS ADULT SPECIAL STUDENTS

Persons at least twenty-one years of age, who do not fulfill the regular admission requirements for freshman standing, but who offer an academic training substantially equivalent, or whose incomplete academic training has been duly supplemented by experience in teaching or other practical preparation, or by special attainment in some particular line, may be admitted to the general colleges as Adult Special students under such conditions as shall be deemed wise in each individual case to do such work as they are prepared to do. Adult Special students are subject to the

same University regulations as regular undergraduates, and they may become candidates for graduation upon fulfilling all University requirements, including those for admission to freshman standing. In case of failure to maintain a good standing in the studies registered for, this privilege is withdrawn, and an Adult Special student suspended for failure in University work may be readmitted only upon meeting the requirements for admission to freshman standing. No person is permitted to abuse the privilege of registering as an Adult Special student to secure merely nominal membership in the University, whether for social purposes or to engage in athletics, or for any other reason. The requirements in Military Science and Physical Education apply to Adult Special students as well as to candidates for degrees.

## REGISTRATION

Registration in the College of Agriculture occurs on the City Campus during the first four days of each semester and each student is given a ticket entitling him to a definite time in which to register. To promote prompt registration a fee of $3 is charged a student who, unless permitted to do so by the Registrar, seeks to register after these days. Registration is not complete until the fees are paid and the application for registration filed in the office of the Registrar. A like fee of $3 is charged for any change whatever in registration, (changing subjects, adding or dropping a subject), unless such change is made necessary by error. A student changing from one College to another must pay a new matriculation fee of $5 and such a change may not be made without written permission to the Registrar from the Dean of each College concerned. A student may change from one group of studies to another on written permission to the Registrar from the Dean. A student is allowed to drop any subject for which he has been regularly registered on written permission of the Adviser approved by the Dean of the College. A first and second year student may not register for more than one one-hour subject nor for more than five subjects exclusive of Military Science and Physical Education in any one semester; a third and fourth year student may not register for more than two one-hour subjects in any one semester. A regular student is not permitted to register for less than twelve hours without permission from the Dean. A first year student may not register for more than 17 hours. A student above the first year who has attained an average of 80% during the previous year may register for a maximum of 18 hours. Credit is not given for work in excess of the maximum of 18 hours a semester or for work pursued

without registration at the time when pursuing the same. A student may not attend classes for which he is not registered except to remove a "condition" or "incomplete". A student who fails in a required subject must register for that subject the first time it is offered. A student who receives a "condition" or "incomplete" must remove that "condition" or "incomplete" by the end of the first semester in which that subject is again offered or it becomes a failure; extensions of time may be granted by instructors to students for removing a "condition" or "incomplete."

## FEES AND EXPENSES

**Fees**[1]. The incidental, library and matriculation fees will not be refunded in any case except when charged thru official error. No laboratory or tuition fees or any portion thereof will be refunded to a student after the beginning of the fourth week from the date of his registration and refund will be made only upon written application to the Registrar, stating reasons and approved by the head of the department concerned, presented at the time of withdrawal from class or from the University together with the receipt for fees issued by the Secretary. Except in extraordinary cases not more than one-third of the laboratory fees will be refunded after the student has attended the laboratory. The schedule of fees in the College of Agriculture is as follows:

| | |
|---|---|
| Matriculation (payable on entering each college) | $5.00 |
| Being statutory, this fee cannot be refunded except when collected in error. It is also charged any student changing membership from one College to another. | |
| Incidental, each semester | 3.00 |
| Library (charged to each student who does not pay a laboratory fee), each semester | 1.00 |
| Special registration (for late registration or re-registration) | 3.00 |
| Special examination, each course | 1.00 |
| Diploma, (undergraduate) | 5.00 |
| Diploma, in absentia, (undergraduate) | 15.00 |
| Certificate | 1.00 |

[1] The secretary does not cash personal checks for accommodation. Checks on personal accounts will be received when written for the amount of the fees only. Parents or guardians are advised to write checks for student's fees and their other expenses separately. Misapprehension as to the amounts charged for fees is thereby avoided.

LABORATORY FEES

Agricultural Botany—Courses 101, 102, 103, 104, $1; 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, $3; 119, 120, 121, 122, 123, 124, for each credit hour a semester $1.

Agricultural Chemistry—Courses 100D, 100E, 101, 102, 106, 115, 116, $5; 104, 105, $6; 103, 117, 118, $10; 107, 108, for each credit hour a semester $2.

Agricultural Engineering—Courses 5, 6, 7, 14, 24, 31, 32, 33, 34, $1; 1, 2, 3, 4, 8, 9, 10, 12, 17, 18, 22, $3; 15, $8.

Agronomy—1, 2, 51, 52, $1.

Dairy Husbandry—Courses 1, 2, 9, $2; 4, 8, 10, 12, $3; 7, 13, $4.

Entomology—Courses 1, 2, 3, 4, 7, 8, 10, 11, $1; 5, 6, $2; 15, 16, 17, 18 for each credit hour a semester, $1.

Geography—Courses 1, 2, 6, 52, $1.

Home Economics—Courses 1, 2, 8, 9, 10, 11, 12, $2; 3, 4, 5, 6, $5; 7, 23, 26, $3; 24, $1; 25, $6.

Horticulture—Course 5, $3; 21, 22, 23, 24, $2.

Physiology—Courses 1, 2, $5;

Zoology—Courses 6, 11, 12, $2.

**Expenses.** In Lincoln, board and lodging may be secured in private families for from $3.50 to $5 a week. There are also numerous student clubs. The Agent of Student Activities keeps lists of boarding places and also maintains an employment bureau, the services of which are free to all students. In a city the size of Lincoln there are many opportunities for students to defray at least a part of their expenses. The University does not, however, guarantee employment.

Uniforms costing about $15 are required for Military Science.

## REQUIREMENTS FOR GRADUATION

**University Credits.** For the degree of Bachelor of Science, 125 University "credit hours" are required. A course receives one credit hour for each one-hour recitation or lecture and two hours preparation or laboratory period required for each of the eighteen weeks of a semester.

All subjects required for graduation are offered at the Farm campus but the student may elect sciences and academic subjects at the City campus. Students may take elective subjects at the Farm campus, or at the City campus in the College of Arts and Sciences.

## THE GENERAL AGRICULTURAL AND HOME ECONOMICS GROUPS

Students who have satisfied all matriculation requirements and completed the courses in the prescribed groups together with sufficient electives to make a total of 125 University credit hours, will be granted the degree of Bachelor of Science in Agriculture or Home Economics. No student is recommended for a degree who is not within 18 hours of this requirement **at the beginning of his last semester.**

All students except those in the Agricultural Practice Group are required to register according to the outlined courses.

**Required Subjects.** Each candidate for the degree of Bachelor of Science in Agriculture or Home Economics in the College of Agriculture must complete the following subjects.

| For the General Agricultural Group: | Hours |
|---|---|
| Agriculture | 27 |
| Major subject (Agriculture or Science) additional | 20 |
| Elective subjects [1] | 22 |
| Biology (Botany or Entomology [2]) | 12 |
| Chemistry | 11 |
| Biological, Physical, or exact Science | 8 |
| English (Rhetoric 1, 2 and Rhetoric or English Literature) | 10 |
| Economics 1, Farm Management 11 or 12 | 5 |
| History or Sociology | 6 |
| Military Science | 4 |
| Total | 125 |

[1] Elective subjects may be taken in the departments at the University Farm or may be taken in academic or science subjects at the City campus.

[2] Zoology may be taken at the City campus in place of Botany or Entomology.

| For the Home Economics Group [1]: | Hours |
|---|---|
| Foreign language, ancient or modern | 10 |
| English [2] (Rhetoric and English Literature) | 10 |
| History | 6 |
| Philosophy, Sociology or Political Science and Education | 6 |
| Chemistry [3] | 16 |
| Fine Arts 15, 16 | 3 |
| Education | 2 |
| Biological Sciences (Botany or Zoology, Bacteriology and Physiology) | 12 |
| Physical Training | 5 |
| Home Economics | 30 |
| Electives | 25 |
| Total | 125 |

**Science Requirement.** Students selecting the Agricultural Group will be required to complete 27 hours of prescribed agriculture, 20 hours in some major subject, and 31 hours additional in Natural or Physical Science. Students selecting the Home Economics Group will be required to take 30 to 36 hours of Home Economics with 28 to 32 hours of Biological or Physical Science.

**Military Science Required.** Four hours of military science (courses 1, 2, 3, 4) are required of all men students. Only credibly attested physical disability or membership in a religious organization whose creed forbids participation in warfare in any form (on the part of parent in case of a minor) is accepted as excusing from the requirement in military science. Those excused for conscientious scruples are required to do work in Physical Education equivalent in amount. Unless excused or reprieved, each undergraduate man must fulfill this requirement in freshman and sophomore years. A man excused from this requirement (whatever the reason) must still, in order to graduate, obtain the full number of hours credit required of other candidates for the degrees sought. Thoro drill elsewhere than at the University may, as in the case of any other study,

[1] For the additional requirements for the University Teachers' Certificate see page 25.

[2] Rhetoric 1, 2 required.

[3] This requirement is increased to 20 hours if less than two points entrance credit in Chemistry is offered.

on evaluation, be credited to a student in lieu of a like amount of military science at the University. Such credit by commutation, however, in no case exceeds a total of four hours.

**Major Subjects.** Not later than the beginning of the Junior year each student in the College of Agriculture must select some one department of the college in which he will take a major of not less than 20 hours nor more than 30 hours except in the Home Economics Group in which 36 hours may be taken. Upon approval of the Head of the Department in which the major work is done, closely related subjects may be offered to make up the 20 hours minimum.

### The University Teachers Certificate

The University Teachers Certificate is granted only to students who (1) maintain an average of at least 80 per cent in the group of subjects to be taught and a high average in all other subjects in the collegiate course, (2) show special fitness for teaching. This certificate entitles its holder to teach in any high school in Nebraska and is valid in many other states; after three years' successful experience in Nebraska it may be converted into a life ertificate by the endorsement of the State Superintendent.

**Requirements**—15 hours of Education; 6 hours of Philosophy.

1. The candidate must hold the Bachelor's or Master's degree from the University.

| | Hours |
|---|---|
| 2. Psychology 1 and 2 | 6 |
| Education | |
| History of Education 1 and 2 | 6 |
| Educational Psychology 16 | 2 |
| Educational Theory and Practice | 3 |
| For Teachers of Agriculture | |
| Agricultural Education 1 | 2 |
| Special Methods (elect 2 hours) | |
| Agronomy 17 | 2 |
| Agricultural Engineering 20 | 2 |
| Animal Husbandry 16 | 2 |
| For Supervisors of Home Economics | |
| Home Economics 13 and 14 | 4 |

3. A major of not less than 24 hours and a minor of not less than 18 hours may be taken in the subjects of Domestic Science and Domestic Art.

### The First Grade City State Teachers Certificate

**Requirements**—12 hours of Education; 3 hours of philosophy.

| General | Hours |
|---|---|
| Psychology 3 | 3 |
| Education | |
| History of Modern Education 2 | 3 |
| Educational Theory and Practice | 3 |
| Educational Psychology or Child Study | 2 |
| For Teachers of Agriculture | |
| Agricultural Education 1 | 2 |
| Special Methods (elect 2 hours) | |
| Agronomy 17 | 2 |
| Agricultural Engineering 20 | 2 |
| Animal Husbandry 16 | 2 |
| For Supervisors of Home Economics | |
| Home Economics 13 and 14 | 4 |

NOTE—The first grade city state teachers certificate may be converted into a life certificate by the endorsement of the State Superintendent after three years successful experience.

**Advisers.** Every student, before registering, must consult an Adviser in regard to his schedule and secure his Adviser's signature to this schedule.

Freshmen and other entering students shall report to the Dean of the College for assignment to an Adviser. For the Freshman and Sophomore years, a special group of Advisers is provided, in order that students may be assisted to complete the required subjects as fully as possible within these years. At the end of his second year, any student may select as his Adviser any member of professorial rank in the department of the College of Agriculture in which he elects to take his Major work. The Dean of the College constitutes a head Adviser for each student within the College. The Dean of Women is special Adviser to all women students in the College.

**Absence or Withdrawal.** A leave of absence for a short time may be granted a student by the Dean. This leave is merely a justification for absence and not an excuse from any work. Students not previously excused shall make request for excuse for absence within two weeks after the absence ceases. If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a semester, the Registrar grants him permission to do so. Students in good standing who are not minors are given honorable dismissal from the University at their own request; minors, at the request of their parents or guardians.

## ORDER OF COURSES IN THE GROUPS OF STUDY

### GENERAL AGRICULTURAL GROUP

| FIRST YEAR | First Semester Hours | Second Semester Hours |
|---|---|---|
| Biology[1] (Agricultural Botany 101, 102 or Botany 1, 2, or Entomology 3, 4) | 3 | 3 |
| Physical Science (Agricultural Chemistry[2] 101, 102 or Chemistry 1, 2) | 3 | 3 |
| Rhetoric 1, 2 | 2 | 2 |
| Animal Husbandry 1 | 4 | |
| Agricultural Engineering 9, 10, (Wood and Forge) | 2 | 2 |
| Geography 52 | | 3 |
| Dairy Husbandry 1, 2 | 2 | 2 |
| Military Science 1, 2 | 1 | 1 |
| | 17 | 16 |

Modern language (French or German) may be substituted for 5 hours of agricultural subjects in each semester.

| SECOND YEAR | | |
|---|---|---|
| Agricultural Chemistry 103 | 5 | |
| Biology (Agricultural Botany, Botany, Entomology, Zoology 11, 12) | 3 | 3 |
| Agronomy 1 (Crops), 51 (Soils) | 3 | 4 |
| Horticulture 2 | | 2 |
| Electives[3] | 4 | 6 |
| Military Science 3, 4 | 1 | 1 |
| | 16 | 16 |

[1] Botany 1, 2 and Zoology are offered at the City campus. Agricultural Botany 101, 102 and Entomology 3, 4 are offered at the Farm campus.

[2] Where less than 2 points Chemistry is offered for entrance, Chemistry is taken as a five hour subject and Dairy Husbandry or Agricultural Engineering omitted.

[3] Additional Rhetoric or English Literature, 6 hours required. Physics 11, 12, or Mathematics 1, 2, offered at the City Campus may be elected.

| THIRD YEAR | First Semester Hours | Second Semester Hours |
|---|---|---|
| Farm Management 3 | 3 | |
| Major subjects (Agriculture or Science) | 5 | 5 |
| Economics 1, Farm Management 11 or 12 | 3 | 2 |
| Electives[1] | 5 | 9 |
| | 16 | 16 |
| FOURTH YEAR | | |
| History or Sociology | 3 | 3 |
| Major subjects (Agriculture or Science) | 5 | 5 |
| Electives[1] to complete 125 hours credit | 6 | 6 |
| | 14 | 14 |

## TWO YEAR AGRICULTURAL PRACTICE GROUP

Offered at the University Farm

Students in this course may register for Rhetoric 1, 2 and Military Science 1, 2, 3, 4 which are absolute requirements. It is expected that students will continue work the second semester in each department in which they have done work the first semester. Students continuing in the College more than two years must enter the General Agricultural Group and complete science requirements before continuing their agricultural subjects.

| FIRST YEAR | | |
|---|---|---|
| Animal Husbandry 1 (Breeds and Judging) | 4 | |
| Animal Husbandry 2 (Judging), 4 (Feeding) | | 4 |
| Agronomy 1 (Forage Crops), 2 (Cereals) | 3 | 4 |
| Agricultural Engineering 9 (Wood Work), 10 (Forge Work) | 2 | 2 |
| Dairy Husbandry 1 (Principles of Dairying), 2 (Milk Production) | 2 | 2 |
| Horticulture 1, (Vegetable Growing), 2 (Fruit Growing) | 2 | 2 |
| Rhetoric 1, 2 (required) | 2 | 2 |
| Military Science 1, 2 (required) | 1 | 1 |

The student may register for a maximum of 17 hours.

Agricultural Chemistry 101, 102 or 100D, 100E or Agricultural Botany 101, 102 are optional with any of the above agricultural subjects except Military Science and Rhetoric.

[1] See foot-note (3) on p. 27.

| SECOND YEAR[1] | First Semester Hours | Second Semester Hours |
|---|---|---|
| Agronomy 51, 52 (Soils) | 4 | 4 |
| Farm Management 3 (Farm Organization), 2 (Cash Accounting) or 12 (Distribution of Agricultural Products) | 3 | 2 |
| Animal Husbandry 13, 14 (Live Stock Management) | 2 | 2 |
| Agricultural Engineering 1 (Farm Machinery), 2 (Farm Motors) | 2 | 2 |
| Animal Pathology 1 | 3 | |
| Entomology 8 | | 3 |
| Dairy Husbandry 5 (Milk Testing), 4 (Butter Making) | 2 | 3 |
| Horticulture 11, 12 (Vegetable Gardening) | 3 | 3 |
| Rhetoric 5, 6 | 3 | 3 |
| Military Science 3, 4 (required) | 1 | 1 |

The student may register for a maximum of 17 hours.

Agricultural Chemistry 103 (Organic), 104 (Agricultural), or Agricultural Botany 103 and 104, optional with agricultural subjects.

## HOME ECONOMICS GROUP

| FIRST YEAR | | |
|---|---|---|
| Home Economics 1, 2 (Sewing and Textiles) | 3 | 3 |
| Fine Arts 15, 16 (Art and Design) | 2 | 1 |
| Rhetoric 1, 2 (A and S)[2] | 2 | 2 |
| Chemistry 1, 2 or Agricultural Chemistry 101, 102 | 3 | 3 |
| Language, Ancient or Modern (A and S)[2] | 5 | 5 |
| Physical Education 21, 22 | 1 | 1 |
| | 16 | 15 |

[1] A student may register for the first year's work in any department above instead of the work scheduled if he does not have credit in the earlier courses.

[2] Given in the College of Arts and Sciences.

[1] FIRST YEAR FOR STUDENTS WHO HAVE NO ENTRANCE CREDITS IN CHEMISTRY.

| | First Semester Hours | Second Semester Hours |
|---|---|---|
| Home Economics 1, 2 (Sewing and Textiles) | 3 | 3 |
| Fine Arts 15, 16 (Art and Design) | 2 | 1 |
| Rhetoric 1, 2 (A and S)[2] | 2 | 2 |
| Physical Education 21, 22 | 1 | 1 |
| Chemistry D, 1 and 2 or Agricultural Chemistry 100D, 100E | 5 | 5 |
| History or other required subject | 3 | 3 |
| | 16 | 15 |
| SECOND YEAR | | |
| Home Economics 3, 4 (Elementary Food Study) | 4 | 4 |
| Agricultural Chemistry 103, 105 or Chemistry 3, 14 | 5 | 5 |
| Botany 1, 2 or Botany 1 and Zoology 6[3] or Agricultural Botany 101, 102 | 3 | 3 |
| English Literature 1, 2 | 3 | 3 |
| Physical Education 9 | | 1 |
| Physical Education 23, 24 | 1 | 1 |
| | 16 | 17 |
| THIRD YEAR | | |
| Home Economics 6 (Dietetics) | | 4 |
| Home Economics 7, 8 (Textiles and Clothing) | 3 | 3 |
| Bacteriology 2a (A and S)[2] | 2 | |
| Physiology 1, 2 (A and S)[2] | 2 | 2 |
| Philosophy[4] 1, 2 (A and S,)[2] or Philosophy 3 and Sociology or Economics | 3 | 3 |
| Electives | 6 | 4 |
| Home Economics 5 ..... 3 hours. | | |
| Entomology 10 ..... 2 hours. | | |
| | 16 | 16 |

[1] The requirement in foreign language must be fulfilled later.

[2] Given in College of Arts and Sciences.

[3] When Zoology 6 is taken after Botany 1, the requirement for biological science is fulfilled.

[4] Philosophy 1 and 2 are required of candidates for the University Teachers' Certificate. Philosophy 3 is accepted from candidates for the University Teachers' Certificate. See page 25.

| FOURTH YEAR | First Semester Hours | Second Semester Hours |
|---|---|---|
| Home Economics 9, 10 (Household Administration) | 3 | 3 |
| Agricultural Engineering 17 | 1 | |
| Education 4 (Child Study) or Educational Psychology 16 (A and S)[1] | 3 or 2 | |
| History | 3 | 3 |
| Electives | 6 | 9 |
| | 16 | 15 |

[1] Given in the College of Arts and Sciences.

## COURSES OF INSTRUCTION

Students are advised to consult the heads of departments before registering.

For additional courses that may be chosen to apply as "Electives" see "Courses of Instruction" of the College of Arts and Sciences, the College of Engineering, and the Teachers College.

Courses included between [] are not given in 1916-1917.

## AGRICULTURAL BOTANY

Professor Wilcox (*Head of Department*), Associate Professor Link, Assistant Professor Vasey

### GENERAL INFORMATION

The offices, laboratories and lecture room are located in Plant Industry Hall. For use in the instructional work the department has a very extensive collection of lantern slides, charts, and other illustrative material. An extensive pathological herbarium and collection of economic plants are being developed as rapidly as possible. The large private library of the head of the department of Agricultural Botany, particularly complete in phytopathology, is available for the use of advanced students. A greenhouse has recently been arranged and specially equipped for experimental work in physiology and pathology.

A limited number of advanced students with proper training can be offered exceptional opportunities for research work in phytopathology. In some cases it is possible for such students to receive compensation for work done in connection with problems being investigated by the department.

### GRADUATE WORK

The department is especially prepared to offer graduate work in phytopathology, physiology and morphology. To successfully undertake research work in these subjects students should have a broad training in botany, chemistry, and zoology; should be able to read French and German and should have taken at least six hours of work in this department. Before registering, students should consult the head of the department.

COURSES PRIMARILY FOR UNDERGRADUATES

101. **Elementary Botany**—A general introduction to the science of botany. A study of the great groups of plants from the standpoint of morphology. Three hours lecture. Two hours preparation. Four hours laboratory. Three hours credit. First semester. Wilcox, Vasey

102. **Elementary Botany**—101 continued. Second semester.

103. **Botany of Cultivated Plants**—A general survey of the classification, distribution, origin and products of the economic plants of the world. Special attention will be devoted to the botany of grasses and other forage plants and to weeds, poisonous plants and seed testing. Prerequisites: courses 101, 102. Two hours lecture. Four hours laboratory. Two hours credit. First semester. Wilcox

104. **Elementary Plant Pathology**—A course of lectures and readings covering the most typical and important diseases of our leading cultivated plants. Modern methods of disease control will be fully described. Prerequisites: courses 101, 102. Three hours lecture. Six hours laboratory. Three hours credit. Second semester. Wilcox, Vasey

FOR UNDERGRADUATES AND GRADUATES

107. **Plant Physiology**—A course of selected experiments supplemented by lectures, conferences and readings designed to acquaint the student with plant chemics, plant physics and the phenomena of growth and movement. Prerequisites: courses 101, 102 and with or following Agricultural Chemistry 103. Three hours lecture. Six hours preparation. Six hours laboratory. Five hours credit. First semester. Link

108. **Plant Physiology**—107 continued. Second semester.

109. **Microtechnique**—A practical course covering the modern methods of fixing, embedding and staining of plant tissues for examination. Prerequisite: courses 101, 102. Two hours lecture. Four hours laboratory. Two hours credit. First semester. Wilcox

110. **Pathological Anatomy**—A thoro study of the structures and activities of the plant cell in pathological tissues. A comprehensive study of the morphogenic influence of various unfavorable factors. Prerequisite: course 109. Two hours lecture. Four hours laboratory. Two hours credit. Second semester. Wilcox, Vasey

111. **Soil Flora**—A study of the culture methods employed in the study of soil bacteria, fungi and algae. Prerequisites: courses 101, 102

and with or following courses 107, 108. Two hours lecture. Four hours laboratory. Two hours credit. First semester. Wilcox, Vasey

112. **Soil Flora**—A comprehensive study of the bacterial, fungous and algal flora of Nebraska soils. The lectures will cover the various activities of these organisims as related to soil fertility and crop production. Prerequisite: course 111. Four hours laboratory. Two hours lecture. Two hours credit. Second semester. Link, Vasey

113. **Special Morphology of the Fungi**—The morphology, phylogeny, physiology and life history of the principal groups of the fungi. Prerequisites: courses 109, 112. Three hours lecture. Six hours laboratory. Three hours credit. First semester. Wilcox, Vasey

114. **Special Morphology of the Fungi**—113 continued. Second semester.

115. **General Plant Pathology**—A broad survey of the development and present condition of our knowledge of plant disease. Special attention will be given to such subjects as the physiology and cytology of resistance and immunity, origin of parasitism, specialization, epidemics and climatic factors, malnutrition and unfavorable chemical and physical factors. Prerequisites: courses 108, 110, 112, 114. Three hours lecture. Six hours laboratory. Three hours credit. First semester. Wilcox, Vasey

116. **General Plant Pathology**—115 continued. Second semester.

117. **Comparative Physiology**—A lecture-demonstration course, supplemented by readings, designed to acquaint the student with the general questions of all life phenomena. The fact material is taken from both the plant and animal worlds and is presented comparatively. Prerequisites: courses 101 and 102 or Zoology 3 and 4, Entomology 3 and 4, Entomology 1 and 2 or equivalents; Agricultural Chemistry 101, 102 and 103 or equivalents. Three hours lecture. Six hours preparation. Three hours credit. First and second semesters. Link

GRADUATES ONLY

119. **Problems in Plant Pathology**—Assigned problems in plant pathology. Laboratory work with hours for consultation. Two to five hours credit. First semester. Wilcox

120. **Problems in Plant Pathology**—119 continued. Second semester.

121. **Problems in Plant Physiology**—Assigned problems in plant physiology. Laboratory work with hours for consultation. Two to five hours credit. First semester. Link

122. **Problems in Plant Physiology**—121 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## BOTANY

[See College of Arts and Sciences]

## AGRICULTURAL CHEMISTRY

**Professor** Upson (*Head of Department*), Associate Professor Plum, **Assistant** Professor Calvin, Instructor————————, Assistants Anderson, Bennett, Huffman, Skdurna

**The** department of Agricultural Chemistry occupies quarters in **Experiment** Station Hall. The main laboratories are devoted to **general** inorganic chemistry, elementary organic chemistry, qualitative and **quantitative** analysis and general agricultural chemistry. Several private laboratories are provided for instructors and advanced students engaged in **research.**

**Two** types of work are offered by the department of Agricultural Chemistry.

### UNDERGRADUATE WORK

**The** first type comprises courses 100D, 100E, 101, 102, 103, 104 and 105. **These** courses are designed to meet the needs of the students in agriculture **who** desire a working knowledge of chemistry prerequisite to work **in** soils, agronomy, botany, dairying, foods, etc.

### GRADUATE WORK

**The** second type of work is designed for graduates, and undergraduates **with** the necessary training, who wish to specialize in one of the branches **of** Agricultural Chemistry with a view to teaching or taking up Experiment Station or Government work. Courses 106 to 120 are designed **primarily** for this class of students.

The opportunities for graduate work leading to advanced degrees are excellent. In order to pursue successfully advanced work in Agricultural Chemistry students must have had thoro training in inorganic, organic, analytical and physical chemistry. Students intending to specialize in this department are urged to acquire this preliminary training as early in their undergraduate course as possible. A reading knowledge of French and German is also required.

Courses 106, 107 and 108 or their equivalent and courses 115, 116, 117 and 118 are required for the Master's degree. At least one year's resident work and the completion of a satisfactory piece of original investigation are also required. Students must also fulfill the general requirements of the University for the Master's degree.

PRIMARILY FOR UNDERGRADUATES

100D. **General Inorganic Chemistry**—Required of all freshmen in the College of Agriculture who present less than two points entrance credit in chemistry. It is the object of this course to give a definite idea of the fundamental laws of general chemistry as well as to present the more important facts concerning the non-metals and their compounds. Special attention is given to the relation of chemistry to Agriculture and Home Economics. The lectures and recitations are illustrated by experiments Three hours lecture. Six hours laboratory. Six hours preparation. Five hours credit. First semester. Plum, Assistants

100E. **General Inorganic Chemistry**—100D continued. The metals and their compounds. Some attention is given to elementary qualitative analysis during the latter part of the course. Three hours lecture. Six hours laboratory. Six hours preparation. Five hours credit.
Plum, Assistants

101. **General Inorganic Chemistry**—A less extended course than 100 D, designed for those students who present two points entrance credit in chemistry. Two hours lecture. Four hours laboratory. Three hours preparation. Three hours credit. First semester. Plum, Assistants

102. **General Inorganic Chemistry**—101 continued. The latter half of the semester will be devoted to qualitative analysis. Prerequisite: course 101. Two hours lecture. Four hours laboratory. Three hours preparation. Three hours credit. Second semester. Plum, Assistants

103. **Elementary Organic Chemistry**—Prerequisite: course 100 E or 102. The course comprises lectures and quizes which are to a certain extent experimental and deals with the more important classes of compounds

of both the aliphatic and aromatic series. The course is designed to meet the needs of the students in the College of Agriculture but serves also as a general introduction to more advanced work in organic chemistry. In the laboratory a number of simple organic compounds are prepared with a view to furnishing by the fewest illustrations possible, the largest variety of typical reactions and manipulations. Three hours lecture. Six hours laboratory. Six hours preparation. Five hours credit. First semester.
Upson, Bennett

104. **General Agricultural Chemistry**—A general course dealing in a nontechnical manner with the chemistry of soils and fertilizers, the chemistry of plant products and plant growth, the chemical composition of foods and feeding stuffs and agricultural products in general, and the chemistry of animal nutrition. This course is designed especially for students in the College of Agriculture who do not wish to specialize in Agricultural Chemistry. Prerequisite: course 103. Three hours lecture. Six hours laboratory. Six hours preparation. Five hours credit. Second semester. Upson or Calvin

105. **Food and Household Chemistry**—For students in Home Economics. A nontechnical course dealing with the chemistry of the various food substances, their sources, properties and uses; food adulterants and preservatives; the chemistry of human nutrition, digestion, metabolism and excretion; the chemistry of cleaning agents; and the chemistry of textiles. Three hours lecture. Six hours laboratory. Six hours preparation. Five hours credit. Second semester. Upson or Calvin

FOR GRADUATES AND UNDERGRADUATES

106. **Qualitative Analysis**—Lectures and recitations on the principles and practice of qualitative analysis. Considerable emphasis is laid on the application of the laws of chemical equilibrium and of the theories of solution and electrolytic dissociation to the practical problems of analyst. The laboratory work consists of a study of the more important tests used in qualitative analysis followed by work in the qualitative examination of salts, minerals, soils and agricultural products. Required of all students who wish to specialize in Agricultural chemistry. Prerequisite: course 100 E or 102, or equivalent. Two hours lecture. Six to twelve hours laboratory, outside preparation. Three to five hours credit. The lectures may be taken by students who have had qualitative analysis for two hours credit. Second semester. Upson

107. **Quantative Analysis**—An introductory laboratory course in gravimetric and volumetric analysis. Primarily for students specializing in Agricultural Chemistry. Prerequisite: course 106 or equivalent. Open only on consultation with head of department. One hour lecture. Nine to fifteen hours laboratory. Three to five hours credit. First and second semesters. Plum

108. **Special Methods of Quantative Analysis**—Water, gas, organic elementary analysis, electrolytic methods, special mineral. Prerequisite: course 107 or equivalent. Nine to fifteen hours laboratory. Three to five hours credit. First and second semesters. Upson or Plum

112. **Nutrition**—A lecture and seminar course on the chemistry of human and animal nutrition. The chemistry of digestion, metabolism and excretion; composition and digestibility of foods and their influence on growth, milk production, etc. Methods of investigation. Recent literature will be discussed. Lectures, conferences and assigned readings. Three hours lecture. Three hours credit. First semester. Upson

115. **Analysis of Agricultural Products**—A course in the quantitative analysis of grains, flour, fodders, fruits and dairy products. Prerequisite: courses 101, 102, 103, 104 and 107 or their equivalent. One hour attendance. Eight to fifteen hours laboratory. Three to five hours credit. First semester. Upson or Plum

116. **Analysis of Soils and Fertilizers**—Prerequisites same as for course 115. Second semester. Two to five hours credit, depending on amount of time spent. Upson or Plum

117. **Research in Agricultural Chemistry**—Open only to graduates on consultation with the head of department. Considerable latitude is offered in the selection of problems for investigation. The exact nature of the problem depends on the student's previous training and on the lines of investigation in progress at the Experiment Station. The lines of investigation for 1914-1915 include chemical investigations on various silage mixtures, several projects in soil chemistry and soil fertility, and two projects in plant chemistry. Prerequisite: courses 115 and 116 or equivalent and a reading knowledge of French and German. First and second semester. Upson, Plum

120. **Seminar in Agricultural Chemistry.** Once a week thru the year. Upson, Plum, Calvin and Assistants

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## CHEMISTRY

[See College of Arts and Sciences]

## AGRICULTURAL EDUCATION

Professor Bradford (*Head of Department*)

1. **Agricultural Education**—The educational value of industrial, and especially agricultural training; industrial training as applied to Nebraska and Nebraska problems; the part which the schools, rural and town, should take in education for rural life; courses of study and material for agricultural instruction in both rural and high schools; study of the preparation of the teachers for this work. Junior or senior year. Two hours attendance. Four hours preparation. Two hours credit. First semester. Bradford

## AGRICULTURAL ENGINEERING

Professor Chase (*Head of Department*), Associate Professor Seaton, Associate Professor Brackett, Assistant Professor Baer, Mr. Sjogren, Mr. Runnalls

### PRIMARILY FOR UNDERGRADUATES

1. **Carpentry**—Practice with the care, use and adjustment of tools, exercises in bench work, farm equipment and farm building construction. Open to all. Six hours laboratory. Two hours credit. First and second semesters. Baer

2. **Forge Work**—Practice in forging, welding, tempering, pipe fitting, babbitting, chipping, and repairing of farm machinery. Open to all. Six hours attendance. Two hours credit. Second semester. Runnalls

3. **Farm Machinery**—The practical study of all lines of agricultural implements, tillage, seeding, harvesting, threshing, and fertilizing machinery. Open to all. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First and second semesters. Brackett

4. **Farm Motors**—The practical study of farm motors, the horse, windmill, steam boilers, steam engines, traction engines, gasoline engines electric motors. Open to all. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First and second semesters. Seaton

14. **Spraying Machinery**—The design of spraying outfits, practice with the gasoline engine, mixers and pumps, the study of nozzles. Must be taken in connection with Horticulture 5. Three hours laboratory. One hour credit. Second semester. Brackett

15. **Automobiles, Theory and Practice**—A study of automobiles, and other truck engines, ignition systems, carburetors, transmissions and differentials and the care and use of such machines. Open to all. Two hours attendance. Four hours preparation. Three hours laboratory. Three hours credit. First and second semesters. Seaton

17. **Advanced Forge Work**—2 continued. Special studies in welding with gas, in steel work and machine repairing. Prerequisite: course 2. Six hours laboratory. Two hours credit. First semester. Runnalls

18. **Advanced Carpentry**—1 continued. Building construction, cabinet work and furniture making. Prerequisite: course 1 or M. E. 1. Six hours laboratory. Two hours credit. Second semester. Baer

24. **Graphics**—Studies in graphic representation of data, curve plotting, curve analysis, blocking and diagraming data, etc. Open to all but planned especially for agricultural students. One hour attendance and preparation. Two hours drawing. One hour credit. Second semester. Chase

FOR WOMEN

31. **Wood Work and Interior Finishing**—Practice at the bench with light carpenter tools and the care of edged tools for the home. Work in the construction of furniture, painting, oiling, and finishing the same. Instruction in the designing, selecting and care of the interior finish. One hour attendance. Two hours practice. One hour credit. First semester. Baer

33. **House Planning**—A course in house design. Lectures cover arrangement of rooms, heating, lighting, ventilation, plumbing, sewage disposal, water works, fireplaces, stairways, labor-saving devices, etc. To be taken in connection with Home Economics 9. One hour attendance. Two hours drawing. One hour credit. First semester. Baer

FOR UNDERGRADUATES AND GRADUATES

5. **Rural Architecture**—The arrangement of farm buildings and the farmstead, preparation of plans for unimproved farms and for rearrangement and additions to buildings on improved farms. Design and production of working drawings for the various farm structures. Design of beams and

columns, method of construction and use of materials in timber, masonry and reinforced concrete work. Engineers. Two hours attendance. Four hours preparation. Three hours drawing. Three hours credit. First semester. Sjogren

6. **Irrigation and Drainage Engineering** (C. E. 12)—Sources of water supply, canals, seepage, irrigation by pumping, surveys and designs, legal and economic principles. Drainage: field and class work in land drainage, surveys and preparation of plans and estimates of excavation, material and labor costs, study of drainage laws. Advanced engineers only. Three hours attendance. Six hours preparation. Three hours drawing. Four hours credit. Second semester. Stout, Sjogren

7. **Rural Architecture**—The arrangement, design and construction of farm buildings with special emphasis on planning the home, the farmstead, horse barns, dairy buildings, barns and yards, hog houses, granaries, silos, machine sheds, ice houses, fences, etc. For advanced students other than engineers. Two hours attendance. Two hours preparation. Six hours field work and drawing. Three hours credit. First semester. Chase

8. **Irrigation, Drainage and Rural Highways**—Irrigation from the water user's standpoint, requirements for different crops, source of supply, canals, seepage, pumping irrigation. Drainage: Study of different systems and methods of installation,—practice in the use of surveying instruments both in drainage and general field work. Rural highways, road laws and the construction and maintenance of roads. Advanced students other than engineers. Prerequisite: Agronomy 51. Two hours attendance. Two hours preparation. Five hours field work and drawing. Three hours credit. Sjogren

9. **Advanced Farm Machinery**—Laboratory work in the testing of field machines under various conditions. The testing of grinders, shellers, twine, etc. Prerequisite: courses 3 and 24. Six hours laboratory. Two hours credit. First semester. Brackett

10. **Advanced Farm Motors**—The construction of motor testing apparatus and the complete tests of farm motors, both in the field and laboratory. Prerequisite: course 4 or M. E. 10, and in connection with M. E. 16. Six hours laboratory. Two hours credit. Second semester. Seaton

11. **Domestic Engineering**—Studies in illumination and illuminating materials, freezing and heating materials, ventilating systems, water systems, sewerage and sewage disposal plants. Prerequisite: Physics 1

and 2 or 11 and 12; Chemistry 1 and 2. Three hours attendance. Six hours preparation. Three hours credit. Chase

12. **Domestic Engineering Laboratory**—Practice in plumbing, testing of fuels, heating systems, illuminating systems, ventilating systems, pumping systems, etc. Prerequisite: course 11 or by permission. Six hours laboratory. Two hours credit. Chase, Sjogren

16. **Automobile Design**—Special study of current practice in design of the various parts. Drawings and specifications for manufacture by assembling standard products of established manufactures. Engineers only. Prerequisite: course 15. Three hours attendance. Three hours preparation. Three hours designing. Second semester. Seaton

19. **Research Work in Rural Architecture, Farm Drainage and Rural Highways**—There is a broad field for original investigation in the following subjects; drainage, water supplies, lighting, heating, building materials, efficiency gained by proper arrangement of farm buildings, road construction and sewerage. Prerequisite: courses 5 and 6 or 7 and 8. Six to fifteen hours laboratory or reading. Two to five hours credit. Chase, Baer, Sjogren

20. **Research Work in Farm Machinery, Farm Motors and Farm Equipment**—The large equipment of machinery in the department gives an excellent opportunity for testing both in the laboratory and in the field, standardizing, traction tests, calibration and economic tests of both farm machinery and farm motors. Prerequisite: courses 3 and 4. Six to fifteen hours laboratory or reading. Two to five hours credit. Chase, Seaton, Brackett

22. **Normal Course in Manual Training**—An advanced course in carpentry which deals with laboratory equipment for small and large classes, with planning courses, with designing and working up exercises. Prerequisite: course 1 or 31. Three hours laboratory. Three hours outside work. Two hours credit. Second semester. Baer

FOR WOMEN

32. **Wood Work and Interior Finishing**—31 continued, but with hard woods. Prerequisite: course 31. One hour attendance. Two hours practice. One hour credit. Second semester. Baer

34. **House Planning**—33 continued. One hour attendance. Two hours drawing. One hour credit. Second semester. Baer

This department is also responsible for the courses offered in the school of Agriculture, for which see the Bulletin of the School of Agriculture.

## AGRICULTURAL EXTENSION

Professor Pugsley, Departmental Specialists

2. **Extension Methods**—A study of Agricultural Extension organization and work, and of the presentation of agricultural and home economics subjects by extension methods. Training given in the preparation and use of subject matter for extension instruction. Special emphasis is laid upon the value, preparation and use of illustrative and demonstrational material. Open only to juniors and seniors recommended by heads of departments in which they are majoring, or by special permission. Each hour of credit will require, in addition to the study of extension methods, the preparation, illustration and delivery before the class of a lecture on some subject to be agreed upon by student and head of department concerned. One hour attendance. Two to five hours preparation. One to two hours credit. Second semester. Pugsley

## AGRONOMY

Professor Burr (*Head of Department*), Professor Kiesselbach (Experimental) Professor Hopt, Assistant Professor Young, Assistant Professor Keim, Mr. ———

Students should have or take at least one year's work in Botany and Chemistry. Courses are offered to meet the needs of (1) those students taking general culture courses, or interested in farm operations or the management of land; (2) those fitting themselves to be agricultural teaches or investigators.

### Field Crops Section

1. **Forage Crop Management**—An elementary and general course in the management of common and important forage crops, with special reference to Nebraska conditions. Classification, distribution and adaptation of common forage plants. Methods by which good seed may be secured. The seeding, care, harvesting and best use of forage crops, including those used for pasture, studied in considerable detail. Special attention given to identification of forage crop plants and seeds also of the more common or dangerous adulterants and weed seeds found in same. Two hours lecture. Four hours laboratory. Three hours preparation. Three hours credit. First semester. Hopt, Keim, Assistants

2. **Cereal Crop Management**—An elementary and general course in the management of cereal crops with special reference to Nebraska con-

ditions. Each of the great cereals studied with reference to adaptation, seedbed preparation, seeding, cultivation, and harvest. Improvement of field crop plants thru the simpler forms of breeding. Laboratory practice in identifying and describing the various types and varieties of cereals. Scoring, judging and grading grain. Two hours lecture. Four hours laboratory. Six hours preparation. Four hours credit. Second semester.

Hopt, Keim, Assistants

3. **The Minor Field Crops in Nebraska**—A critical study of such special, minor and new crops as broomcorn, sugar beets, flax, hemp, buckwheat, soybeans, cowpeas, sweet clover, chick peas, feterita and Sudan grass. The culture of these plants, especially under Nebraska conditions, is taken up in considerable detail. The weaknesses and strong points as well as the special uses and adaptations of each of these crops are pointed out. Prerequisite: courses 1, 2, 51 and 52. One hour lecture. Two hours preparation. One hour credit. First semester. Hopt

4. **Field Crop Plants and Practices**—The history and evolution of field crop plants and field crop practices. The relation of farming methods to food supply and human progress. The origin, domestication and evolution of field crop plants. Relationships, classification and nomenclature. Prerequisite: courses 1, 2, 51 and 52. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

5. **Farming in Dry Regions**—A study of special problems, and methods in regions where lack of moisture rather than a lack of soil fertility is usually the determining factor in crop production. Sub-humid, dry and irrigation farming. A discriminating study of the various types, groups and varieties of crops with reference to use under the above mentioned conditions. Recommended to students from western Nebraska and other dry sections. Prerequisite: courses 1, 2, 51 and 52. Two hours attendance. Four hours preparation. Two hours credit. First semester. Hopt

6. **Field Crop Technology**—Problems and methods relating to the more technical phases of field crops. Field crop experimentation, teaching and demonstration. The breeding of field crop plants. Government service. Intended only for students who are specializing in agronomy. Prerequisite: courses 1, 2, 51 and 52. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

10. **Field Crops Management**—The management of the more important cereal and forage crops—with special reference to Nebraska conditions. A brief practical course for students who are not registered in

the College of Agriculture and cannot take the more thoro courses 1 and 2. Open to students in the College of Agriculture, only by permission of the instructor. Two hours attendance. Four hours preparation. No laboratory. Two hours credit. Second semester. Hopt

11. **Forage Crop References**—Assigned forage crop readings. A thoro study of Piper's "Forage Plants and Their Culture", and of various readings in other texts and bulletins. These text studies and reference readings are essentially those required as supplementary work in course 1. This course is open only to School of Agriculture students who have completed courses A, B, C and D, and whose records in the department are entirely satisfactory. Two hours attendance. Four hours preparation. Two hours credit. First semester. Hopt

12. **Cereal Crop References**—This course bears the same relation to course 2 that the course "Forage Crop References" does to course 1. The plan of the work and the prerequisites are the same in this course as in Course 11. The text is Hunt's "Cereals in America". Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

17. **Laboratory Practice**—Practice in the teaching of laboratory classes in secondary school work. With the teaching is included the care and handling of necessary laboratory supplies. Registration only by arrangement with the instructor. Two hours credit. First semester.
Hopt, Keim

18. **Laboratory Practice**—17 continued. Second semester.

20. **Field Crop Seminar**—Presentation and discussion of manuscripts on various field crop subjects. Reviews of the latest and most important literature and data in field crops. One hour attendance. Two hours preparation. One hour credit. Prerequisite: courses 1, 2, 51 and 52. Open only to juniors, seniors and graduate students. Second semester.
Hopt, Keim, Assistants

51. **Soil Physics**—An elementary study of the physical properties of soils from the viewpoint of plant growth and crop production. The origin of soils; the physical characteristics of surface soils and subsoils; soil classification and mechanical analysis; soil structure, and tillage as a means of modifying it; soil water, its use and control; soil heat; and soil air. The laboratory exercises are designed to give a detailed study of the more important properties of soils as discussed in the lecture room. Two hours lecture. Four hours laboratory. Six hours preparation. Four hours credit. First and second semesters. Young, Assistants

52. **Soil Chemistry and Biology**—A study of the chemical and biological relations of soils to crop production. Chemical analysis of soil and its interpretation; farm manures; commercial fertilizers; soil microorganisms, their distribution and relation to the decay of organic matter; nitrification, and nitrogen fixation. The laboratory exercises give a more detailed study of the various properties of soils as discussed in the lecture room. Prerequisite: course 51. Two hours lecture. Four hours laboratory. Six hours preparation. Four hours credit. First and second semesters.
Young, Assistants

53. **Soil Fertility**—The fertility of soils and the factors influencing the crop producing capacity of agricultural lands. Prerequisite: courses 1, 2, 51 and 52. Two hours lecture. Four or more hours preparation. Credit according to work. First semester. Young

54. **Soil Fertility**—53 continued. Second semester.

55. **Soils of the United States**—A study of the soils of the United States considering the important types of soil, their physical and chemical characteristics, origin, and crop adaptation. The soils of the Corn Belt and of Nebraska are especially emphasized. Prerequisite: courses 1, 2, 51 and 52. Two hours lecture. Four hours laboratory and preparation. Two hours credit. First semester. Young

56. **Soil Management**—Principles governing the management of land. Crop rotations, tillage, fertilizing and manuring, erosion, drainage, and irrigation are considered. Prerequisite: courses 1, 2, 51, 52. Two hours lecture. Four hours preparation. Two hours credit. Second semester.
Young

57. **Agricultural Examination of Soils**—A course designed to study soils in the field. Soil mapping and analysis; methods of determining the soil needs, improvement, and management. Prerequisite: courses 1, 2, 51, 52, 53, 54 and 56. Credit according to work. First or second semester.
Young

65. **Seminar**—Reviews of recent literature and discussions of Soil problems. Participated in by the departmental staff. Open to seniors and graduate students who have taken courses 1, 2, 51 and 52. One hour attendance. Two hours preparation. One hour credit. First semester
Young, ———

66. **Seminar**—65 continued. Second semester.

### Summer Session Courses

101. **Agronomy**—A general elementary course in soil physics and cereal crops. Designed primarily for superintendents and others who are interested in the teaching of agriculture and in secondary schools. Laboratory practice with a series of carefully written exercises and prepared materials which have recently been made available to public schools. In this course it is the intention to present as much as possible of the fundamental courses 2 and 51. Five hours lecture. Twenty hours preparation and laboratory. Four hours credit. Summer session. Hopt and Young

102. **Agronomy**—The plan of this course is similar to that of Agronomy 101. The subject matter is forage crops and the chemistry and biology of soils. This course embodies as much as possible of courses 1 and 52. Prerequisite: course 101. Five hours lecture. Twenty hours peparation and laboratory. Four hours credit. Summer session. Hopt and Young

103. **Agronomy**—This course is designed for students who desire outdoor and individual study of problems in soils and field crops during the growing season. Registration only by arrangement with the instructors. Credit according to work. Summer session. Hopt and Young

#### PRIMARILY FOR GRADUATES

Students taking these courses must have completed all general courses in Agronomy and Farm Management.

1. **Investigation**—Satisfactory work on some special line of investigation with assigned readings. Six to twenty hours laboratory. Thesis required. Two to five hours credit. First semester. Kiesselbach

2. **Investigation**—Continuation of 1. Second semester.

3. **Methods of Investigation**—Compilation of experimental data Correlation tables. Statistical methods. Six to twenty hours laboratory. Two to five hours credit. Kiesselbach

4. **Methods of Investigation**—Continuation of 3. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## ANIMAL HUSBANDRY

Professor Burnett (*Head of Department*), Professor Gramlich, Professor Lee, Assistant Professor Dickson, Assistant Professor Pier, Assistant———

PRIMARILY FOR UNDERGRADUATES

1. **Judging Live Stock and Study of Breeds**—Includes the comparative judging of market and breeding types of cattle and hogs. A study of the breeds of horses, cattle, sheep and hogs. Methods of development. Characteristics and adaptability. Two hours lectures. Four hours judging. Six hours preparation. Four hours credit. First semester. Gramlich, Pier

2. **Judging Live Stock**—Includes the comparative judging of market and breeding types of horses and sheep. Four hours judging. Two hours preparation. Two hours credit. Second semester. Gramlich, Pier

4. **Live Stock Feeding**—Methods of feeding all classes of farm animals. The compounding of rations. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Lee

5. **Animal Nutrition**—Methods employed in conducting experimental feeding. A study of experiment station bulletins. Preparation of coarse fodders. Grinding, steaming and cooking of feeding stuffs. Prerequisites: course 4 and Chem. 1; Chem. 2 required or can be taken at the same time. Two hours attendance. Four hours preparation. Two hours credit. First semester. Lee

6. **Animal Nutrition**—General composition of the animal body. Digestion, absorption, metabolism, and secretion. Influence of food on animal form and on quality of meat and milk. Prerequisites: course 5 and Chem. 3. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Lee

7. **Animal Breeding**—Embraces general principles of breeding, selection, and heredity. Includes a historical study of old and modern theories. Prerequisites: course 1 and Zoology 1, 2. Two hours attendance. Four hours preparation. Two hours credit. First semester. Pier

8. **Animal Breeding**—Discussion of recent results along the line of animal breeding. Practical points in breeding. Study of line breeding and inbreeding. Attention given to importing and breeding laws. Study of herd book regulations. Prerequisite: course 7. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Pier

9. **Judging Live Stock**—Advanced course in judging with special attention given to the study of breed type. Prerequisites: courses 1 and 2. Two hours attendance. One hour preparation. One hour credit. First semester. Lee

10. **Judging Live Stock**—Continuation of 9. Prerequisite: course 9. Two hours attendance. One hour preparation. One hour credit. Second semester. Lee

11. **Judging Live Stock**—Continuation of 9 and 10, with especial attention given to comparison and judging of animals of different ages and also to group judging. Prerequisite: course 10. Two hours attendance. One hour preparation. One hour credit. First semester. Gramlich

12. **Animal Husbandry—Seminar**—Prerequisites: courses 4, 5, 6, 7, 8. Two hours attendance. Two to four hours preparation. One or two hours credit. Second semester. Gramlich, Lee, Pier

13. **Live Stock Management**—Care and management of the breeding herd of cattle and hogs. Prerequisite: course 4, unless otherwise arranged. Two hours attendance. Four hours preparation. Two hours credit. First semester. Gramlich

14. **Live Stock Management**—Continuation of 13. Care and management of the breeding herd of horses and sheep. Prerequisite: course 4, unless otherwise arranged. Four hours preparation. Two hours attendance. Two hours credit. Second semester. Gramlich

15. **Pedigrees**—A study of the registration of pure bred animals. Historical study of the various breed associations together with familiarization with their rules and methods. Practice in the tracing of pedigrees. Prerequisite: courses 1 and 2. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Gramlich, Pier

16. **Laboratory Practice**—Practice in teaching laboratory subjects in secondary school work. Registration only by arrangement with instructor. Two hours credit. Second semester. Gramlich

### Poultry Section

Assistant Professor Dickson

1. **Elementary Poultry Management**—A series of practical lectures on farm poultry and its management, dealing with poultry house construction, yarding, fattening, killing, dressing, marketing, winter egg production, and a brief study of breeds adapted to Nebraska farms. Two hours attendance. Four hours preparation. Two hours credit. First semester. Dickson

2. **Elementary Poultry Management**—1 continued. Handling of farm poultry, incubation and brooding, feeding and rearing chicks, diseases, market eggs, and marketing poultry products. Must be preceded by course 1. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Dickson

3. **Poultry Practice**—A laboratory course for those desiring practice work in feeding and caring for a pen of birds, keeping accurate records of feed given and number of eggs produced; fattening, killing, and dressing, showing amount of gain made and loss incurred by dressing; incubator and brooder construction; anatomy and judging of the more common breeds. Must be preceded by or accompany course 1. Six hours laboratory. Two hours credit. First semester. Dickson

4. **Incubation and Brooding**—Each student hatches and raises chicks, keeping accurate records of all work; handling, grading, and packing of market and hatching eggs. Time to be arranged. Must be preceded by course 1; also preceded or accompanied by course 2. Two or three hours credit. Second semester. Dickson

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## ANIMAL PATHOLOGY

Professor Gain (*Head of Department*), Associate Professor Sturdevant

1. **Diseases of Farm Animals**—Causes and prevention of animal diseases. Emergency treatment and minor surgery. Three hours attendance. Six hours preparation. Three hours credit. First semester. Gain

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## DAIRY HUSBANDRY

Professor Frandsen (*Head of Department*), Associate Professor Woodward, Instructors Maxwell, Thorson, Mr. North, Mr. Colman

1. **Principles of Dairying**—The object of this course is to give such fundamental training in dairying as will be of practical value to the student and at the same time prepare him for more thoro work in the dairy courses which follow. This course deals with the characteristics and composition

of milk, factors influencing the amount and composition of milk, physiology of milk secretion, breeds of dairy cattle, testing of milk and cream by the Babcock method, cream separation, cream ripening, principles of butter-making and dairy sanitation. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First semester.

Frandsen, Woodward, Maxwell, Thorson

2. **Principles of Dairying**—1 continued. Second semester.

3. **Milk Production**—This course covers the field of Dairy Husbandry in its relation to the producer. It consists of two lectures a week and one laboratory period devoted to judging of dairy cattle. Lectures cover matter relating to the leading breeds of dairy cattle, their characteristics and adaptation for dairy purposes; the selection, breeding and building up of the dairy herd; selection of the dairy sire; calf raising; proper care of dairy cattle; the dairy barn; use of silo; a thoro study of the composition and relative food value of the leading dairy feeds and the feeding of dairy animals with special reference to economical milk production. Instruction in judging dairy cattle will consist of a study of the type and characteristics of the various dairy breeds. Prerequisite: courses 1 and 2. course 5 should be taken in connection. Two hours attendance. Four hours preparation. Three hours laboratory. Three hours credit. First semester. Woodward, North

4. **Butter Making**—This course includes a general study of the composition of dairy products, separation and acidity of milk, the preparation of starters, ripening of cream, churning, and the packing of butter. Prerequisite: courses 1 and 2. Two hours attendance. Four hours preparation. Three hours laboratory. Three hours credit. Second semester.

Frandsen, Thorson

5. **Dairy Judging**—The object of this course is to enable the student to fix in his mind the types of cattle that are profitable producers of dairy products. The greater part of the work is done by comparative judging, using the Ayrshires, Guernseys, Holsteins and Jerseys of the College herd and those of nearby herds. Prerequisite: courses 1 and 2, should be taken in connection with course 3. Three hours laboratory. One hour credit. First semester. Woodward

6. **Advanced Dairy Judging**—5 continued. Prerequisite: course 5. One hour preparation and two hours laboratory. One hour credit. Second semester. Frandsen, Woodward

7. **Milk Testing and Inspection**—This course consists of a study of the Babcock test for fat in milk and cream. It includes work with the various tests for moisture in butter, also a careful study of the methods for detecting preservatives and adulterations in dairy products, as well as the best methods of taking samples and of testing individual cows. This course also includes a careful study of the requirements necessary for the production of sanitary and certified milk. Prerequisite: courses 1 and 2. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First semester. Maxwell

8. **Ice cream and Ices**—Elective in the Agricultural and Home Economics course. This course consists of a study of the manufacture of ice cream and ices. Prerequisite: courses 1 and 2 or course 12 or by special arrangement. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. Second semester.
Frandsen, Thorson, Maxwell

9. **Official Testing**—The object of this course is to prepare men for positions as official testers of dairy cattle for advanced registration. The course includes a study of the rules and methods of conducting the tests; preparing of reports; individual breed requirements; and the benefits to the dairyman to be derived from official records. A portion of the time will be devoted to the study of cow testing associations. The laboratory work consists of actual practice in official testing. Prerequisite: courses 1, 2 and 3. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First semester. Frandsen, Colman

10. **Cheese Making**—A study of the importance of the quality and composition of milk in the manufacture of Cheddar Cheese; the principles involved in cutting, heating, milling, maturing, salting and pressing the curd, curing and marketing; influence of organized and unorganized ferments in cheese; the construction and ventilation of cheese curing rooms. This course also includes lectures and laboratory work in the manufacture and marketing of Brick, Cream and Cottage Cheese. Prerequisite: courses 1, 2 and 7. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. Second semester. Thorson

12. **Domestic Dairying**—This course is especially arranged for students of the Home Economics course. The object is to give the student some practical as well as scientific knowledge concerning the care and preparation of dairy products for food purposes. The course includes lectures and laboratory work on the care of milk and cream; testing for fat, acidity, adulteration, preservatives and the general purity of milk and cream.

Some work is also given in the manufacture of butter, cheese and ice creams. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. Second semester. Frandsen, Thorson, Maxwell

13. **Dairy Bacteriology**—In this course the student studies the fundamental principles upon which is based the sanitary production and handling of milk, the relation of bacteria to the dairy industry in general, market milk, certified milk, sanitary milk, pasteurized milk, milk borne diseases, sources of contamination, normal and abnormal fermentations and their control. The course will deal with the bacteria more common to dairy products entirely from a practical standpoint. Prerequisite: courses 1, 2, 7 and elementary bacteriology. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. First semester. Maxwell

16. **Market Milk**—This course includes a study of the production, handling, and marketing of clean milk and cream for public consumption; dairy sanitation; sources of milk contamination; sanitary planning and equipment of dairy buildings and milk bottling plants; transportation of milk; city ordinances; state and federal laws; condensed milk; modified and fermented milks; scoring milk and cream; city milk inspection. Prerequisite: courses 3, 7, 13. One hour attendance. Three hours preparation. Three hours laboratory. Two hours credit. Second semester. Maxwell

FOR UNDERGRADUATES AND GRADUATES

51. **Dairy Seminar**—Elective for students specializing in dairying. This course consists of a study of the work accomplished by the various experiment stations, also a review of the best foreign dairy literature. One hour attendance. Two hours preparation. One hour credit. First semester. Frandsen

52. **Dairy Seminar**—51 continued. Second semester.

53. **Thesis**—Original work and investigation on some phase of the dairy industry. Frequent conferences with instructors. Prerequisite: senior standing. Two to four hours preparation. One or two hours credit. First or second semester. Frandsen, Woodward

FOR GRADUATES

101. **Research Methods.**—A critical study of the methods employed in conducting dairy experimental work at this and other stations. One hours attendance. One hour credit. First semester. Frandsen, Woodward

102. **Research Methods**—101 continued. Second semester.

103. **Research in Milk Production**—A large herd of cattle of the leading dairy breeds is available for use in studying problems of feeding, breeding-milk production, growth, and care and management of the dairy animal, This herd produces sanitary milk for the city trade and special opportunities are offered for a critical study of sanitary and certified milk production. Students especially interested are allowed to assist with the investigations now under way at the Experiment Station and in certain instances may undertake special problems independently. Thesis required. First semester.
Frandsen, Woodward

104. **Research in Milk Production**—103 continued. Second semester.

105. **Research in Dairy Manufactures**—Opportunity and facilities are given by special arrangement to study and investigate special problems in butter making, ice cream making, cheese making and other work directly pertaining to dairy manufactures. First semester. Frandsen

106. **Research in Dairy Manufactures**—105 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## ENTOMOLOGY

Professor Bruner (*Head of Department*), Professor Swenk, Assistant Professor Dawson

### GENERAL INFORMATION

The department maintains a laboratory fully equipped for the use of students engaged in research work along systematic lines, and a modern insectary well provided with apparatus useful in facilitating research in economic entomology, such as breeding cages, cameras, dark room and aquaria, for those investigating the life-histories of insects. The research laboratory is supplied with compound and dissecting microscopes, microscopical accessories, camera lucida, lanterns and slides and illustrative models and charts. A collection of insects numbering approximately 250,000 pinned specimens is available for study by advanced students; it is particularly rich in Hymenoptera, Diptera and Orthoptera and contains many specimens of these orders named by specialists, including a considerable number of their types. While the greater portion of the collection is representative of our state and national fauna, it is also exceedingly rich

in exotic material from Argentina, Costa Rica, Mexico and the Philippine Islands collected by Professor Bruner on entomological excursions to these countries. The library contains practically complete files of all the American and the principal foreign entomological periodicals as well as most of the special monographs in the various orders, and is readily accessible to advanced students, while the excellent economic libraries of the State Entomologist and Nebraska Experiment Station are close at hand and available for reference. The results of studies carried on in the department are issued consecutively in a numbered series.

Courses 3 and 4 are open to all students, and they, or their equivalent, must precede all other college courses in entomology except 7, 8, 9, 10 and 11.

FOR UNDERGRADUATES

3. **Economic Entomology**—An introduction to the more practical phases of entomology, beginning with a consideration of the structure, physiology and metamorphosis of insects and a review of the insect orders, and following this with a presentation of the broad principles of insect damage and benefit, and the natural and artificial control of insects. Laboratory work involving the dissections of typical forms of the various orders and the rearing of insects, together with assigned readings correlated with the lectures. Three hours attendance. Six hours laboratory and preparation. Three hours credit. First semester. Bruner

4. **Economic Entomology**—3 continued. In addition, studies of various groups of conspicuously injurious insects, emphasizing their life-histories and habits and the special preventives and remedies for them. Assigned readings correlated with the lectures, and in the spring observations of the work of injurious insects in the field. Three hours attendance. Six hours laboratory and preparation. Three hours credit. Second semester. Bruner

PRIMARILY FOR UNDERGRADUATES

5. **Systematic Entomology**—A close study of the principles and machinery of classification as applied to insects, involving a consideration of current taxonomic methods in entomology, of nomenclatural codes and of faunal areas, designed especially to acquaint the student with the literature of entomology and the approved methods of preparing data for publication as a foundation for research work in systematic entomology. Laboratory work with the various insect groups, designed to give a conception of the varying value of classificatory characters. Two hours attendance. Seven hours laboratory. Three hours credit. First semester. Swenk

6. **Systematic Entomology**—5 continued. In addition, a detailed study of entomological technique, involving methods of collecting, preparing and preserving insects for the cabinet and museum and the use of apparatus necessary in entomological work. Two hours attendance. Seven hours laboratory. Three hours credit. Swenk

7. **Farm Entomology**—A detailed consideration of the principal insect enemies of the apple, stone fruits, grape and bush fruits and the strawberry, and of the preparation and use of insecticides and methods of spraying and fumigation. Assigned readings correlated with the lectures, and, wherever possible, field work in investigating insect pests. Three hours attendance. Four hours preparation. Two hours credit. First semester. Swenk

7a. **Live Stock Entomology**—A course taking up in detail the injuries, life histories and habits, and modern means of prevention and destruction of the mites, ticks, lice, fleas, stable-flies, horn-flies, horse-flies, bot-flies and similar important insect pests of our domestic animals. This course is correlated with course 7 and is usually to be taken with it, but may be elected separately if desired, especially by students majoring in Animal or Dairy Husbandry. One hour attendance. Two hours preparation. One hour credit. First semester. Swenk

8. **Farm Entomology**—7 continued. A similar detailed study of the principal insects injurious to corn, the small grains, alfalfa and clover, grasses, the potato and the sugar beet, and garden vegetables, and to stored vegetables and animal products, designed to give the student a thoro understanding of the means of control of all of the important pests of our cereal, forage and garden crops, and a fund of practical information on the control of injurious insects in general. Three hours attendance. Six hours preparation. Three hours credit. Second semester. Swenk

9. **Apiculture**—A general survey of the subject, including a discussion of the structure, life-history, varieties and communal life of the honey bee; methods of handling bees, formation of colonies, controlling the colony growth, rearing of queens, honey and wax production, apiary paraphernalia and the symptoms, etiology and control of bee diseases and other enemies of bees. One hour attendance. Two hours directed reading. One hour credit. First and second semesters. Bruner

10. **Domestic Entomology**—A brief general survey of insect life, emphasizing especially the insects affecting the household, such as silver fish, cockroaches, termites, house flies, mosquitoes, fleas, house ants, clothes moths, flour and meal pests, etc., with thoro discussions of means of con-

trol. Two hours attendance. Four hours directed reading. Two hours credit. First semester. Swenk

11. **Forest Entomology**—Lectures and laboratory studies of the insects of the forest. Two hours attendance. Seven hours laboratory and preparation. Three hours credit. Second semester. Bruner

(Courses 12 and 13 not to be given in 1916-1917).

14. **Seminary**—The seminary work of the department is carried on by the Nebraska Entomological Society, an association of students specializing in entomology and taking advanced or graduate courses, meeting at intervals for the presentation of papers and the discussion of current entomological literature.

PRIMARILY FOR GRADUATES

(These courses may be registered for repeatedly until the completion of the problem.)

15. **Research in Systematic Entomology**—Independent studies under the advice of the head of the department leading to the monographing of some genus, subfamily or family of insects or the detailed study of the insect fauna of Nebraska in one of the larger groups. First semester. Bruner

16. **Research in Systematic Entomology**—15 continued. Second semester.

17. **Research in Economic Entomology**—Individual investigation of some special problem in economic entomology, usually the monographing of a species or group of species of economic importance. First semester. Bruner

18. **Research in Economic Entomology**—17 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## FARM MANAGEMENT

Professor Filley (*Head of Department*), Mr. Rhodes, Mr. Watson

Farm Management is the business side of farming. It deals with the problems which confront every farmer in the organization and management of his farm. The farm is considered as a business investment from which the owner and operator wish to secure the greatest continuous profit.

All the courses offered except courses 1 and 2 presuppose not only general agricultural knowledge but also some technical training. For this reason they are better adapted to advanced students than to first or second year men.

Students wishing to major in the department should register for course 1 at the beginning of the sophomore year. If only a years' work can be taken in Farm Management, course 3 followed by either 2 or 6 is recommended. The seminar and field survey courses offer unusually good opportunities for a limited amount of graduate work.

### FOR UNDERGRADUATES AND GRADUATES

1. **Farm Documents**—This course deals with the legal phase of the farm business. Contracts, leases, deeds, mortgages, abstracts, negotiable instruments and other legal papers of which the farmer should have a working knowledge are discussed. Some time is given to those parts of the Nebraska law, such as the provisions regarding live stock and labor, which bear most directly upon farm management problems. Open to all but freshmen. Two hours attendance. Four hours preparation. Two hours credit. First semester. Filley

2. **Farm Accounts**—A practical system of cost accounts for the farmer. Each student keeps a set of books which show the cost of the various farm operations for the year, and the gain or loss upon each farm enterprise. Open to all but freshmen. Two hours lecture. Four hours preparation. Two hours credit. Second semester. Filley

3. **Farm Organization**—Types of farming and their adaptation to different regions, size of the farm unit, capital, labor, systems of land tenure, maintenance of soil fertility, cropping systems, the farm layout, choice and purchase of a farm, and other factors of farm organization which affect farm profits are studied. Work based on text books, bulletins and Nebraska farm management survey records. Open to juniors, seniors, graduates, to second year men in the agricultural practice group, and to others by permission. Graduates of the School of Agriculture who have credit for Farm

Management A may register for the course for two hours credit. Three hours attendance. Six hours preparation. Three hours credit. First semester. Filley

4. **Farm Management Seminar**—Prerequisite: course 3. A continuation of course 3, dealing with specific problems in Farm Management. Each student investigates and reports upon some particular problem. Three to fifteen hours meeting, preparation, and library. One to five hours credit. Second semester. Filley

11. **Distribution of Farm Products**—This course deals with such problems as producers and consumers prices, wholesale and retail marketing, competition and cooperation. The marketing of cereal crops is studied in detail, the grain being traced from producer to consumer. This includes the study of the farmers' elevator movement, railway rates, grain exchanges, grain warehouses, and other factors affecting prices. Open to juniors, seniors, graduates, second year men in the Agricultural Practice Group and others by permission. Two hours attendance. Four hours preparation. Two hours credit. First semester. Filley

12. **Distribution of Farm Products**—11 continued. The marketing of live stock and live stock products is studied in detail. Different types of animals are traced from the farm to the consumers' table. The latter part of the semester is devoted to a study of the retail store. Two hours credit. Second semester. Filley

PRIMARILY FOR GRADUATES

7. **Farm Management Survey**—Prerequisite: courses 3 and 4. Field work, tabulation, and analysis of data. It is designed to train students for field work and to give them a first hand knowledge of Nebraska farm conditions. Field work may be done during vacation. Admission by consent of the instructor. Three to fifteen hours meeting, field work, tabulation of data and library. One to five hours credit. First semester. Filley

8. **Farm Management Survey**—7 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## GEOGRAPHY AND CONSERVATION

### State Conservation and Soil Survey

Professor Condra (*Head of Department*), Professor Brownell, Professor Loveland, Associate Professor Bengtson, Miss Nelson, Mr. Ruby

Courses 1, 2, 4, 5 and 6 are open to all students. Field courses are planned separately for men and women. Courses 1, 5, and 21 are well adapted to the needs of Engineering students. Persons preparing to teach Geography should consult with the head of the department concerning the choice and sequence of courses. The election of majors and minors will vary with the individual needs of the student.

By co-operation with other departments this department is able to offer preparation for work in Soil Survey and Real Estate. Certain courses may be grouped after the general requirements of the Colleges of Agriculture and Arts and Sciences are met, affording specialization along the above lines during the sophomore, junior and senior years. Students wishing to take advantage of this training should elect their Major in the department of Geography and Conservation, and on first consultation with the departmental adviser should indicate which one of the vocational lines he intends to follow. Graduate instruction leading to the second and third degrees is offered. Theses are based on original work done in the laboratory and field.

1. **Lands**—A lecture and laboratory course. Some of the topics treated are materials of the land; relief features; origin and description of the land forms produced by wind, ground water, rivers and glaciers; classification and interpretation of maps. Lectures fully illustrated by lantern slides, maps, models and specimens. Two hours attendance. Two hours laboratory and two hours library preparation. Two hours credit. Open to all. First semester. Bengtson and Assistants

2. **North America**—A summary study of the political divisions, relief, drainage, coast lines and climate. A full treatment of each of the seventeen topographic regions, including their structure, topography, physiographic development, resources and industries. The great Plains Region is emphasized. The course is suited to all students who wish a knowledge of the geography of our country. Lectures illustrated. Two hours attendance. Four hours library, laboratory and preparation. Two hours credit. Second semester. Condra, Bengtson

4. **The Atmosphere**—(Meteorology). The course is designed to meet the needs of students in geography and agriculture. Some of the topics considered are the composition of the atmosphere; distribution of heat and atmospheric pressure; wind systems; humidity and rainfall; storms; hot winds; changes and fluctuations of climate; climatology in its relation to deserts, prairie land, forests, agriculture, and the distribution of people; the construction of weather maps and climatic charts; forecasting, and the use and care of meteorological instruments. Two hours attendance. Four hours laboratory and preparation. Two hours credit. First and second semesters.

5. **Industrial Geography**—This course covers the mineral fuels, iron, forest, and water resources and their development. Studies are made of the following: Coke, coal, petroleum, iron and steel, lumber, turpentine, pulpwood, rubber, and water power. Lectures fully illustrated by slides, motion pictures, charts, and specimens. Two hours attendance. Four hours library and preparation. Two hours credit. Open to all. First semester. Condra, Bengtson

6. **Agricultural Industries**—Practical studies are made of the following industries: Cotton, corn, wheat, beet sugar, cane sugar, apple, poultry, cattle and sheep. The processes involved in converting raw materials into the finished articles of commerce are emphasized. The forms, processes, and commercial relation are illustrated by means of specimens and well selected sets of lantern slides and motion pictures. This is a course in practical agricultural industry. Two hours attendance. Four hours library, museum, and preparation. Two hours credit. Second semester.
Condra, Bengtson

7. **Methods in Physical Geography**—This course deals primarily with the problem of presenting Physical Geography in the high school. Discussion of subject matter and methods oi teaching. Collection and use of reference books and illustrative materials. Selection of laboratory exercises. Purpose and management of field excursions. Should be preceded by Geography 1 and 2, or equivelent. Two hours attendence. Four hours preparation. Two hours credit. First semester. Nelson

11. **Teachers' Laboratory Courses in Physical Geography**—Eight hours laboratory and supervision. Two hours credit. First and second semesters.

(*a*) Involves working a selected list of exercises suitable for use in high schools. The teacher's problems in preparing for these exercises are studied, and some time given to discussion of suitable demonstration experiments

for class use. Serves to prepare students for actual laboratory supervision. Four hours laboratory and conference. One hour credit. First and second semesters. Nelson

(*b*) Involves class management, preparation for class instruction making of lesson plans, review of examination papers, provision for desk experiments; direction of laboratory work with sections of the Geography classes in the high school, care of the laboratory and its supplies, preparation in advance for experimental work, assistance to pupils at the tables, and review of laboratory papers handed in. Nelson

12. **Laboratory Course in Regional Geography**—Intensive study of selected regions of the United States designed to furnish students the preparation necessary for accurate independent work. Two hours credit. Second semester. Bengtson

17. **Seminar**—Primarily for graduate students. Special research problems. Credit determined by results and time. First semester.
Department Staff

18. **Seminar**—Course 17 continued. Second semester.

### Field and Survey Courses

9. **Field Work**—For women. Excursions to points of geographic interest near Lincoln, Milford, Pleasant Dale, Roca, South Bend and Louisville. A study of rivers, flood plains, terraces, drift deposits, rock ledges, escarpments, talus slopes, valleys, quarries, and sand dredging. Persons wishing the course should consult with one of the instructors before registering. Credit depending on time and results, usually one hour. First semester. Nelson, Mrs. Condra

10. **Field Work**—Course 9 continued. Second semester.

21. **Field Work**—Open to all men students. Excursions are made to the valleys of Salt Creek, Blue River and the Platte to study the various surface features, such as loess plains, drift hills, alluvial terraces, fans, flood plains, rock benches, talus slopes, spurs, and ridges, sand dredging gravel pits, clay pits, and quarries. Use of the level, camera, and drawing materials as employed in surveys. Interpretation of topographies and origin of different classes of soil emphasized. Field trips on certain Saturdays. One or two hours credit. First and second semesters.
Bengtson, Ruby

22. **Field Work**—Course 21 continued. Plan table work added. First and second semesters.

23. **Soil Survey**—A field course in practical soil classification, description, and mapping. The methods used in state and national surveys exemplified. Designed for Agriculture, Engineering, and special students. Autos are used for field reconnoissance. Open to advanced students registered by permission. Two hours credit. First and second semesters.

Condra, Bengtson, Ruby

24. **Soil Survey**—Course 23 continued.

28. **Agricultural Geography of Nebraska**—The physiography and industries of the state. Topographic and soil regions are carefully studied, especially with respect to their geography and agricultural relations. Lectures are given by men representing different phases of the state development and survey activities. Designed for those who wish to know Nebraska better. Lectures illustrated by slides, specimens and motion pictures Some field trips are made to places of physiographic and industrial interest. Two hours attendance. Two hours credit. Second semester.

Bengtson

52. **Agricultural Geography**—A fundamental course in the study of land and climate. Some of the topics treated are: materials of the land; rock weathering; erosion by streams, glaciers, ground water, and wind; origin and description of land forms; weather and climate. Field trips are made to interpret and describe land forms. Laboratory work includes study of soil forming minerals and rocks, construction and interpretation of maps, uses of weather maps, climatic charts, and meteorological instruments. Lectures illustrated. Three hours attendance. Six hours laboratory and preparation. Three hours credit. Second semester at farm campus.

Bengtson, Loveland

## HOME ECONOMICS

Professor Loomis (*Head of Department*), Assistant Professor Davis, Assistant Professor Vance, Miss Brown, Miss Warner, Miss Ohlsen, Miss Corbin, Miss VanKirk, Miss Fedde, Miss Kjelson

### GENERAL INFORMATION

The courses in this department are planned to meet the needs of three classes of students:

(1) Those students who are specializing in other lines of study and desire some knowledge of home economics as part of a general education.

(2) Those students who desire a special study of home economics together with the arts and sciences necessary for the successful management of homes.

(3) Those students who wish to teach domestic science and art or home economics or to enter allied professions.

Courses are required in related subjects, hygiene, sociology, fine arts and the sciences. Approximately one-fourth of the work is given in the Home Economics Department, one-fourth is in science and one-fourth in language and history. In the Junior and Senior years a part of the work is elective.

The lectures are given on the city campus or preceding laboratory periods in Home Economics Hall. This building, besides affording a dormitory for students in the School of Agriculture, contains eight well equipped laboratories, a practice dining room and kitchen and a small modern laundry. The Hall offers an excellent opportunity for practice work in household administration problems.

The following courses are required for a major in Home Economics in the Agricultural College: 1[1], 2, 3[2], 4, 6[3], 7, 8, 9, 10.

For a major in Home Economics in the Agricultural and Teachers Colleges: 1[1], 2, 3[2], 4, 6[3], 7, 8, 9, 10, 13, 14.

For a minor in Domestic Art in the Arts and Sciences College: 1[1], 2, 3[2], 4, 7, 8.

For a minor in Domestic Art in the Arts and Sciences and Teachers Colleges: 1[1], 2, 3[2], 4, 7, 8, 13.

For a minor in Domestic Science in the Arts and Sciences College: 1[1], 2, 3[2], 4, 6[3].

For a minor in Domestic Science in the Arts and Sciences and Teachers Colleges: 1[1], 2, 3[2], 4, 6[3], 13, 14.

1. **Sewing and Textiles**—Fundamental principals of sewing and garment-making applied to the making of household articles, undergarments and simple dresses. Use and alterations of patterns. Drafting. Textiles, their origin, production and manufacture. Study and comparison of materials from the standpoint of the consumer. Two hours attendence. Four hours laboratory. Three hours outside preparation. Three hours credit. First semester. Davis, Brown, Van Kirk

2. **Sewing and Textiles**—1 continued. Second semester.

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[1] Courses 1, 2 must be preceded or accompanied by Fine Arts 15 and 16.

[2] Courses 3, 4, (Elementary Food Study) must be preceded or accompanied by Chemistry 1 and 2.

[3] Course 6, Dietetics, whether taken in a minor in other colleges or in a major in the Agricultural College must be preceded or accompanied by Chemistry 3 (Organic) and 14 (Food and Sanitary) or their equivalent and Physiology 1 and 2.

3. **Elementary Food Study**—Composition and function of typical foods; fundamental principles and processes of cooking and their application in the preparation of foods; nutritive and economic values; food preservation. Should be preceded or accompanied by Chemistry 1 and 2. Two hours attendance. Six hours laboratory. Four hours outside preparation. Four hours credit. First semester. Vance, Fedde

4. **Elementary Food Study**—3 continued. Second semester.

7. **Textiles and Clothing**—Designing and advanced principles of dressmaking. Millinery. Comparison of home and factory made clothing. Clothing budgets and relative percentage of income spent for clothing. Care and hygiene of clothing. Microscopic and chemical analyses of fabrics. Development of textile and clothing industries and a study of the economic and sociological phases of these industries today. Two hours attendance. Four hours laboratory. Three hours outside preparation. Three hours credit. First semester. Davis, VanKirk

8. **Textiles and Clothing**—7 continued. Second semester.

9. **Household Administration**—House plans and furnishings; ventilation, heating, lighting, water supply, disposal of waste; management of household affairs, division of income, domestic service, and care of the house. Must be taken in connection with Agricultural Engineering 17. Two hours attendance. Three hours laboratory. Four hours outside preparation. Three hours credit. First semester. Loomis, Warner

10. **Household Administration**—9 continued. Second semester.

11. **Survey Course in Food Study**—For students in the College of Arts and Sciences who desire a general knowledge of foods, their composition, preparation and place in the dietary. Open only to students above the freshman year. Not required in the Four-Year-Home Economics Group. Two hours lecture. Three hours laboratory. Two hours credit. First semester. Vance

12. **Survey Course in Foods**—11 continued. Includes the preparation and service of simple dietaries for adults and children in health and disease.

13. **Teachers' Course**—Theory and method of teaching Home Economics. Required of candidates for the University Teachers' Certificate in Home Economics. Lectures with practice teaching. Two hours attendance. Four hours outside preparation, including practice teaching. Two hours credit. First semester. Loomis, Davis

14. **Teachers' Course**—13 continued. Second semester.

24. **Elementary Food Study**—This course is intended for students who have entrance credits in food study from an accredited high school. The quality of the work must have been satisfactory to the Department of Home Economics in the University. This course will, in addition to the entrance credits, be equivalent to Home Economics 3 and 4. It should be preceded or accompanied by Chemistry 1 and 2. Two hours attendance. Three hours laboratory. Outside preparation. Two hours credit. First semester. Vance, Fedde

Agricultural Engineering 33—**House Planning**—A course in house design given by the department of Agricultural Engineering. Baer

PRIMARILY FOR GRADUATES

6. **Dietetics**—A study of the chemical, physical, and economic factors involved in the problems of human nutrition. To be offered for graduate as well as undergraduate work. Prerequisite: general, organic and food Chemistry; Physiology; Home Economics 3 and 4. Four hours credit.

105. **Advanced Problems in Food Study**—Lectures, conferences, library, and laboratory work on problems in the preservation and preparation of food. Prerequisites: Bacteriology 2a, Chemistry, Home Economics 3 and 4. Three to four hours credit.

106. **Dietetics**—Additional reference and conference work with individual problems in the study of actual dietaries and the planning of dietaries to meet the various needs. To be taken in connection with or following Home Economics 6. Graduate credit only. It is recommended that students registering for Home Economics 6 and 106 register also for Agricultural Botany 117 and 118, Comparative Physiology, and Agricultural Chemistry. Two to four hours credit.

117, 118. **Seminary on Home Economics Education**—A study of the development of Home Economics, with particular attention to the correlation of these with other subjects; the articulation of Home Economics work in the various grades of schools; the consideration of courses of study now in use; and the planning of courses that will meet the growing demand for vital, flexible, well balanced courses. Prerequisites: 24 hours undergraduate work in this department, educational courses sufficient to entitle student to State Certificate, and successful teaching experience in Home Economics. Two hours credit.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## HORTICULTURE

**Professor** Howard (*Head of Department*), Associate Professor **Hood,** Associate Professor Cooper, Assistant Professor Nicolet

The courses offered in this department are designed to give the student a thoro working knowledge of the principles and practice of the most important lines of horticultural work. The orchard, vineyard, gardens, forestry plats and arboretum are used to demonstrate the principles brought out in the class room.

A limited number of advanced students who desire to fit themselves for teachers and investigators will be employed at moderate compensation to assist in the laboratory of the School of Agriculture during the winter and also to help with the work at the Experiment Station during the summer.

Agricultural Botany 101 and 102, or Botany 1 and 2, should precede all courses in Horticulture. All courses are open to women, but courses 3, 4 and 20 are especially recommended.

### PRIMARILY FOR UNDERGRADUATES

1. **Principles of Vegetable Growing**—This course includes the study of the principles of vegetable growing, a consideration of seeds and seeding, and the requirements for the successful manipulation of plants. Each vegetable crop will be discussed. Prerequisite: Botany 1 and 2. Two hours attendance. Two hours laboratory. Two hours preparation. Two hours credit. First semester. Hood

2. **Principles of Fruit Growing**—An introductory course designed to cover the principles of fruit growing, and their application to our common tree fruits. Two hours preparation. Two hours attendance. Two hours credit. Second semester. Howard

3. **Vegetable Gardening and Ornamental Plants**—A study of seeding, vegetative propagation of plants, management of the home garden, school gardens, care of lawns, culture of potted plants and ornamental flowers suitable for window gardening and for outdoor home decoration. Courses 3 and 4 are designed to meet the needs of girls wishing a brief study of horticulture for the home as well as to give some appreciation for school garden work. Open to women only. Two hours attendance. Four hours preparation. Two hours credit. First semester. Hood

4. **Vegetable Gardening and Ornamental Plants**—3 continued. Second semester.

5. **Spray Mixtures**—This course is designed to give a thoro practical knowledge of insecticides and fungicides and their manner of application for the control of insects and fungous diseases, and the methods of repairing and correcting broken, diseased, deformed and insect infested trees must be taken in connection with Agricultural Engineering 14. Juniors and seniors. One hour attendance. Two hours preparation. Four hours laboratory. Two hours credit. Second semester. Cooper

11. **Advanced Vegetable Growing**—A detailed and systematic study of vegetable crops. This course is designed to meet the needs of those desiring to engage in commercial truck gardening. The laboratory work will be devoted to the study of systematic olericulture, or the study of the different varieties of vegetables. This enables the student to acquaint himself with the best varieties both in quality, production and commercial importance. Judging and scoring of vegetables will also be given attention. Prerequisite: course 1 and Botany 1 and 2, or Agricultural Botany 101 and 102. Open to juniors and seniors. Two hours attendance. Three hours laboratory. Four hours preparation. Three hours credit. First semester. Hood

12. **Advanced Vegetable Growing**—11 continued. Second semester.

13. **Farm Forestry**—The propagation of forest trees; nursery methods and practices; requirements of forest trees as to soil, moisture and climate; care of trees in farm wood-lots; the best species for Nebraska windbreaks and groves; preparation of planting plans; value of the timber crops; identification of common trees and shrubs; care and arrangement of street trees. Two hours attendance. Three hours laboratory. Four hours preparation. Three hours credit. First semester. Nicolet

15. **Tree Fruits**—All phases of propagation, planting, culture, control of insects and fungous diseases, harvesting, storing and marketing tree fruits with reference to commercial orcharding will be given special attention. The laboratory exercises consist of actual field work along the lines covered by the lectures. Prerequisite: course 2. Three hours attendance. Four hours laboratory. Five hours preparation. Four hours credit. First semester. Cooper

16. **Small Fruits**—All phases of preparation, planting, control of insects and fungous diseases, culture, harvesting, storing and marketing bush, cane and vine fruits with reference to commercial fruit growing are discussed. The laboratory work will consist in illustrating the lines covered by the lectures. Juniors and seniors. Two hours attendance. Two hours

laboratory. Five hours preparation including assigned readings. Three hours credit. Second semester. Cooper

17. **Apple Judging**—Identification and description of varieties of apples. Identification of insect, fungous and storage injury. Selecting specimens and preparing exhibits. Exercises in judging box, barrel and plate exhibits. Four hours laboratory. Two hours preparation. Two hours credit. First semester. Cooper

20. **Landscape Gardening**—Lectures, reference reading, plant studies, field trips, written reports and drawings. The principle of art as applied to landscape architecture. This course is prerequisite to all other courses given in landscape gardening. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Nicolet

FOR UNDERGRADUATES OR GRADUATES

7. **Horticultural Problems**—Assigned problems in Horticulture. Experimental work in the laboratory, gardens, greenhouses, or orchards, planning experiments, and keeping records. Hours for consultation. Two to five hours credit. First semester. Howard, Hood, Cooper, Nicolet

8. **Horticultural Problems**—7 continued. Second semester.

10. **Genetic Seminar**—This course is given with a view of reviewing the experimental work in genetics. Prerequisite: Animal Husbandry 7 or Horticulture 25 or Zoology 32. One hour attendance. Two hours preparation. One hour credit. Second semester. Howard

19. **Systematic Pomology**—This course takes up in detail the systematic classification, nomenclature and discussion of tree, vine and bush fruits with the histories, origin and adaptability of each. The laboratory consists of the examination and classification of the various fruits. Prerequisite: course 2. Two hours attendance. Four hours laboratory. Three hours preparation. Three hours credit. First semester. Cooper

21. **Landscape Design**—(**Elementary Course**)—Design of farm and city homes, school grounds, small parks, based on topographic surveys. A study of planting materials and their use in landscape gardening. This course is not intended for students majoring in landscape gardening, but for those desiring a fuller appreciation of the subject than can be had by taking course 20. Prerequisite: course 20. Six hours laboratory. Three hours preparation. Three hours credit. First semester. Nicolet

22. **Landscape Design**—21 continued. Second semester.

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Series XXIII No. 7

# Bulletin of The University of Nebraska

## ANNUAL CATALOG

OF THE

## COLLEGE OF AGRICULTURE

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## ANNOUNCEMENT

1918 -19

Published by the University April 19, 1918
LINCOLN, NEBRASKA

The Bulletin of the University of Nebraska is published monthly in February, semi-monthly in March, semi-weekly in April and monthly in May and November of each year by the University of Nebraska. Entered at the Post-Office at Lincoln, Nebraska, as second-class matter under Act of Congress July 16, 1894.

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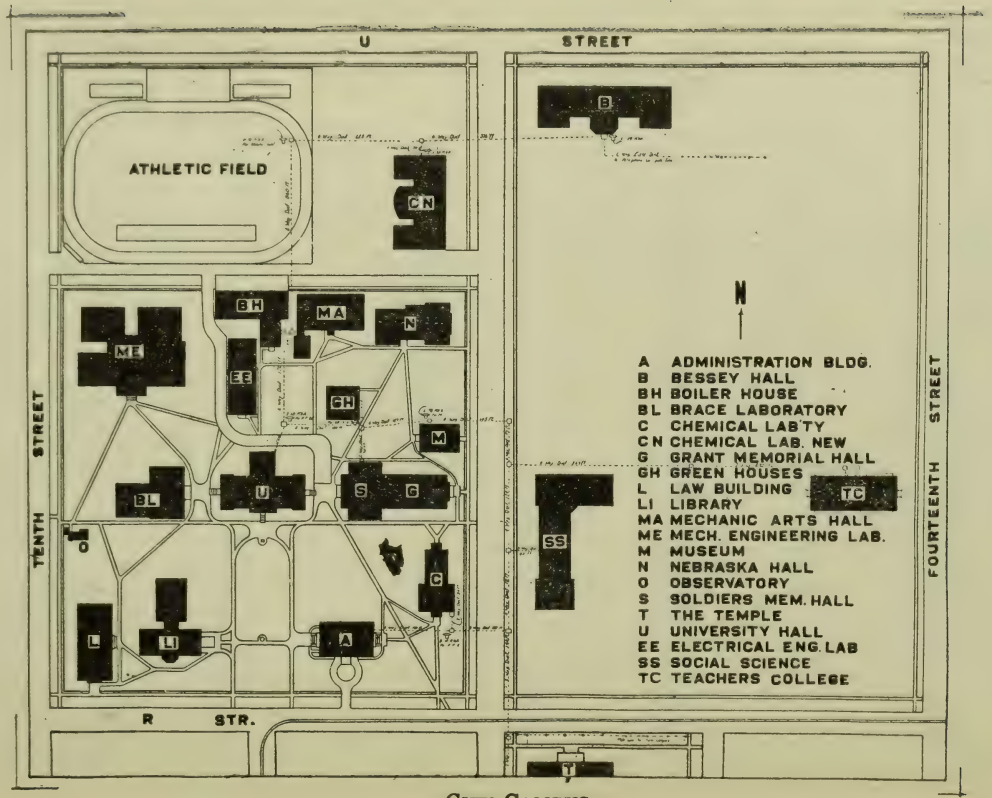
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BL BRACE LABORATORY
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LI LIBRARY
MA MECHANIC ARTS HALL
ME MECH. ENGINEERING LAB.
M MUSEUM
N NEBRASKA HALL
O OBSERVATORY
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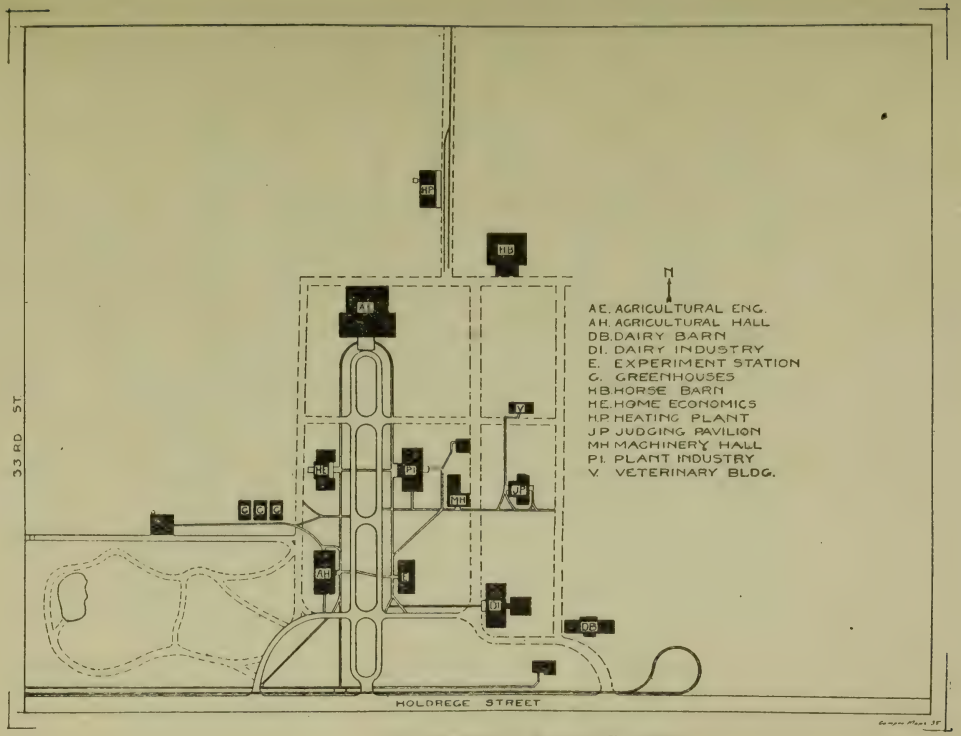
T THE TEMPLE
U UNIVERSITY HALL
EE ELECTRICAL ENG. LAB
SS SOCIAL SCIENCE
TC TEACHERS COLLEGE

City Campus




UNIVERSITY FARM CAMPUS

**The College of Agriculture** offers courses to all graduates of accredited high schools. Graduates of such a course should apply for entrance to the College and not to the School of Agriculture. A new agricultural group (the Agricultural Practice Group) is now offered for students who can spend but two years at the College of Agriculture. This College opens on September 11, 1918, and all students should present themselves for admission at that time.

**The School of Agriculture** (a secondary school of the College of Agriculture) is a high school in which agriculture is given special emphasis. Students from the farms or without sufficient high school credit to enter the College may enter this school. Graduation from this school does not lead to a degree, but courses are offered intended to specially qualify young men for practical farmers and young women for efficient home keepers. This course is not offered as a substitute for a college course, but as a substitute for a regular high school course. The year opens October 11, 1918, and those wishing to enter the school should present themselves at that time.

A separate catalog is issued for the four-year course in the School of Agriculture.

For further information, write to the Dean of the College of Agriculture, University Farm, Lincoln.

## COLLEGES AND SCHOOLS OF THE UNIVERSITY

The University of Nebraska comprises the following colleges and schools:

The Graduate College, including the Graduate School of Education.
The College of Arts and Sciences, including the Schools of Commerce and Fine Arts.
The Teachers College, including the Teachers College High School.
The College of Engineering.
The College of Agriculture, including the Schools of Agriculture.
The College of Law.
The College of Medicine.
The College of Pharmacy.

The Nebraska Agricultural Experiment Station, the Nebraska School of Agriculture at Curtis and the Experimental Substations at North Platte, Culbertson, Valentine and Scottsbluff and the Farmers' Institute are under the supervision of the Board of Regents of the University.

For separate catalogs or information regarding any of the above colleges or schools, address

THE REGISTRAR,
The University of Nebraska,
Lincoln, Nebraska.

## THE UNIVERSITY YEAR

The regular session of the University embraces thirty-nine weeks, beginning the second Wednesday after the first Monday of September, and is divided into a first and a second semester. A summer session of eight weeks immediately follows the close of the second semester class work. Instruction is offered from September to August.

To enter any session, one must be able either to meet the minimum admission requirements to the University or to meet the conditions for "Adult Special" registration.

## CALENDAR FOR THE COLLEGE OF AGRICULTURE

| | | |
|---|---|---|
| **1918** | | |
| September 9-14 | Monday-Saturday | Entrance examinations |
| September 11-14 | Wednesday-Saturday | First semester registration |
| September 14 | Saturday, 8 p. m. | University reception to all students |
| September 17 | Tuesday, 11 a. m. | Opening address by the Chancellor |
| [1]October 11 | Friday | School of Agriculture first semester begins |
| November 26 | Tuesday, 6 p. m. | Thanksgiving recess begins |
| November 30 | Saturday, 12 m. | Thanksgiving recess ends |
| December 10 | Tuesday | Regular meeting of the Board of Regents |
| December 21 | Saturday, 12 m. | Christmas recess begins |
| **1919** | | |
| January 1 | Wednesday | School of Agriculture winter short course begins |
| January 4 | Saturday, 12 m. | Christmas recess ends |
| January 27 | Monday | School of Agriculture second semester begins |
| Jan. 25 to Feb. 1 | Saturday-Saturday | First semester examinations |
| Jan. 25 to Feb. 1 | Saturday-Saturday | Entrance examinations |
| Jan. 29 to Feb. 1 | Wednesday-Saturday | Second semester registration |
| February 3 | Monday | Second semester classes begin |
| February 15 | Saturday | Charter Day. Regular meeting of the Board of Regents. Twenty-third Annual Mid-Winter Commencement |
| March 29 | Saturday 12 m. | Spring recess begins |
| April 5 | Saturday 12 m. | Spring recess ends |
| April 8 | Tuesday | Regular meeting of the Board of Regents |
| April 25 | Friday | School of Agriculture Commencement |
| May 31-June 7 | Saturday-Saturday | Second semester examinations |
| **Commencement Week** | | |
| June 7 | Saturday | Final recommendation for degrees by faculties |
| June 7 | Saturday | Class Day. Alumni Day |
| June 7 | Saturday evening | Regular meeting of the Board of Regents |
| June 8 | Sunday | Baccalaureate sermon |
| June 9 | Monday | Forty-eighth Annual Commencement |
| **Summer Session 1919** | | |
| June 9 | Monday | Summer Session begins |
| June 13-14 | Friday-Saturday | Registration, Summer Session |
| August 1 | Friday, 8 p. m. | Thirteenth Annual Summer Session Commencement |
| **1919-1920** | | |
| September 10 | Wednesday | First semester begins (1919-1920) |

[1]A separate bulletin is published for the four-year course in the School of Agriculture.

## OFFICERS OF ADMINISTRATION AND INSTRUCTION

[1]SAMUEL AVERY, Ph. D., LL. D., Chancellor of the University. Administration Hall. City Campus.

WILLIAM GRANGER HASTINGS, A. B., Acting Chancellor of the University. Administration Hall. City Campus.

EDGAR ALBERT BURNETT, D. Sc., Dean of the College of Agriculture, Director of the Nebraska Experiment Station. Agricultural Hall 203.

CARL CHRISTIAN ENGBERG, Ph. D., Executive Dean. Administration Hall. City Campus.

FLORENCE IRWIN McGAHEY, A. B., Registrar and University Publisher. *(Secretary of the Faculties.)* Administration Hall. City Campus.

[2]MARY CATHERINE GRAHAM, A. B., Dean of Women.

AMANDA HENRIETTA HEPPNER, A. M., Acting Dean of Women. Administration Hall. City Campus.

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CHARLES WILLIAM PUGSLEY, B. Sc., Director of Extension Service in the College of Agriculture and Professor of Agricultural Extension. Agricultural Hall 102.

LAWRENCE BRUNER, B. Sc., Professor of Entomology and State Entomologist. *(Head of Department of Entomology.)* Plant Industry Hall 208.

EDWIN MEAD WILCOX, Ph. D., Professor of Plant Pathology and Physiology and Plant Pathologist of the Experiment Station. *(Head of Department of Plant Pathology and Physiology.)* Plant Industry Hall 304.

LEON WILSON CHASE, M. E., A. E., Professor of Agricultural Engineering. *(Head of Department of Agricultural Engineering.)* Agricultural Engineering Hall.

JULIUS HERMAN FRANDSEN, M. S. A., Professor of Dairy Husbandry. *(Head of Department of Dairy Husbandry.)* Dairy Industry Hall 208.

HARRY ELWYN BRADFORD, A. M., Principal of the School of Agriculture and Professor of Secondary Agricultural Education. *(Head of Department of Secondary Agricultural Education.)* Agricultural Hall 207.

GEORGE EVERT CONDRA, Ph. D., Professor of Geography and Conservation. *(Head of Department of Geography and Conserva-*

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[1]Absent on leave from February 1 to September 1, 1918, in war service.

[2]Resigned.

*tion.)* Director, State Conservation and Soil Survey. Nebraska Hall 105.

[1]ALICE MARIE LOOMIS, A. M., Professor of Home Economics. *(Head of Department of Home Economics.)*

WILLIAM PATTON SNYDER, M. S., Superintendent of Experimental Substation, North Platte.

[2]SAMUEL MINTER PARKER, Captain of Infantry, U. S. Army, Commandant of Cadets and Professor of Military Science and Tactics. *(Head of Department of Military Science and Tactics.)*

FRED WILBERT UPSON, Ph. D., Professor of Chemistry. *(Head of Department of Chemistry.)* Chemistry Hall 107.

HORACE CLYDE FILLEY, A. M., Professor of Farm Management. *(Head of Department of Farm Management.)* Farm Management Hall 203.

ROBERT FRANCIS HOWARD, A. M., Professor of Horticulture. *(Head of Department of Horticulture.)* Plant Industry Hall 105.

WILLIAM WESLEY BURR, B. Sc., Professor of Agronomy. *(Head of Department of Agronomy.)* Experiment Station Hall 109.

HOWARD JOHN GRAMLICH, B. Sc., Professor of Animal Husbandry. *(Head of Department of Animal Husbandry.)* Stock Judging Pavilion 201.

RAYMOND JOHN POOL, Ph. D., Professor of Botany. *(Head of Department of Botany.)* Bessey Hall 210.

LEUNIS VAN ES, M. D., V. S., Professor of Animal Pathology and Hygiene. *(Head of Department of Animal Pathology and Hygiene.)* Veterinary Hall.

HARRIS LEE ROBERTS, Colonel U. S. Army, retired. Commandant of Cadets and Professor of Military Science and Tactics. *(Head of Department of Military Science and Tactics.)* Plant Industry Hall.

JAMES HARRISON GAIN, M. D. C., Professor of Animal Pathology. Veterinary Hall.

THEODORE ALEXANDER KIESSELBACH, A. M., Professor of Agronomy. Plant Industry Hall 202.

GEORGE ANDREW LOVELAND, A. M., LL. B., Professor of Meteorology and Section Director United States Weather Bureau. Brace Laboratory.

[2]CYRUS VANCE WILLIAMS, A. M., Superintendent of the Nebraska School of Agriculture, Curtis.

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[1]Absent on leave.
[2]Resigned.

MYRON HARMON SWENK, A. M., Professor of Economic Entomology and Assistant State Entomologist. Plant Industry Hall 206.

ERWIN HOPT, B. Sc., Professor of Agronomy. Dairy Industry Hall 305.

HARLEY MARTIN PLUM, Ph. D., Professor of Chemistry. Chemistry Hall 317.

[1]GEORGE KONRAD KARL LINK, Ph. D., Professor of Plant Pathology and Physiology.

JOHN ERNST WEAVER, Ph. D., Professor of Ecology. Bessey Hall 121.

FRANK E. MUSSEHL, B. S., Professor of Poultry Husbandry. Farm Management Hall 105.

ALLAN PARK DAVIDSON, B. Sc., Superintendent Nebraska School of Agriculture, Curtis.

JULIA VANCE, A. B., B. Sc., Associate Professor of Home Economics. *(Acting Head of Department of Home Economics.)* Home Economics Hall.

[2]LAZELLE BRANTLY STURDEVANT, A. M., M. D., Associate Professor of Animal Pathology.

NELS AUGUST BENGTSON, A. M., Professor of Geography and Conservation. Nebraska Hall 108.

GEORGE WILLIAM HOOD, M. S. H., Associate Professor of Horticulture. Plant Industry Hall 102.

LAURENCE FROYD SEATON, B. Sc. in M. E., Professor of Agricultural Engineering. *(Acting Head of Department of Mechanical Engineering.)* Mechanical Engineering Building 203.

ELDA REMA WALKER, Ph. D., Associate Professor of Botany. Bessey Hall 214.

LEVA BELLE WALKER, A. M., Associate Professor of Botany. Bessey Hall 314.

[2]JOHN RALPH COOPER, B. Sc., Associate Professor of Horticulture.

[1]EDWIN GARVER WOODWARD, A. M., Associate Professor of Dairy Husbandry.

ELMER EUGENE BRACKETT, B. Sc. in E. E., Associate Professor of Agricultural Engineering. On leave. First Lieutenant, Aviation Section, Signal Reserve Corps.

[2]ARTHUR EUGENE ANDERSON, A. B., State Leader in charge of County Agent Work. *(Extension Service in co-operation with U. S. Department of Agriculture.)*

[2]SIMON WAYNE ALFORD, D. V. S., Superintendent of the Serum Plant.

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[1]Absent on leave.
[2]Resigned.

MAUD MATHES WILSON, B. Sc., Leader Home Economics Section and Associate Professor of Home Economics. *(Extension Service in co-operation with U. S. Department of Agriculture.)* Agricultural Hall 109.

[1]MATTHEW ELLIS DICKSON, B. Sc., Associate Professor of Poultry Husbandry.

LEWELLYN TERRY SKINNER, B. Sc., Assistant to the Director and Associate Professor of Agricultural Extension. *(Extension Service in co-operation with U. S. Department of Agriculture.)* Agricultural Hall 102.

CHARLES ELLSWORTH GUNNELS, B. Sc., State Leader in charge of County Agent Work. *(Extension Service in co-operation with U. S. Department of Agriculture.)* Agricultural Hall 104.

PORTER L. GADDIS, B. Sc., Associate Professor of Agronomy. Experiment Station Hall.

FRANKLIN DAVID KEIM, B. Sc., Associate Professor of Agronomy. *(Extension Service.)* Experiment Station Hall 109.

HENRY W. THURSTON, Jr., B. S., Associate Professor of Plant Pathology and Physiology. Plant Industry Hall.

HERBERT E. EASTLACK, Ph. D., Associate Professor of Chemistry.

[1]HORACE JAMES YOUNG, B. Sc., Assistant Professor of Agronomy.

ALVA ALDUS BAER, A. B., Assistant Professor of Agricultural Engineering. Agricultural Engineering Hall.

ERNEST HERMAN HOPPERT, B. Sc., Assistant Professor of Horticulture. *(Extension Service.)* Plant Industry Hall 105.

JOHN WILLARD CALVIN, B. Sc., Assistant Professor of Agricultural Chemistry. On leave. Lieutenant, Base Hospital Unit.

ALVA RAYMOND DAVIS, A. B., Ph. D., Assistant Professor of Plant Physiology. On leave. Captain, Coast Defense, Ordnance Office.

RALPH WARD DAWSON, B. Sc., Assistant Professor of Entomology. Plant Industry Hall 203.

[1]HAROLD BROCKWAY PIER, B. Sc., Assistant Professor of Animal Husbandry.

[1]RUSSELL RICHARD SPAFFORD, B. Sc., M. A., Assistant Professor of Farm Management. Farm Management Hall 202.

OSCAR WARNER SJOGREN, B. Sc. in A. E., Assistant Professor of Agricultural Engineering. Agricultural Engineering Hall.

EVAN LISTON JENKINS, B. S., M. S., Assistant Professor of Animal Husbandry. Judging Pavilion 205.

MARGARET SOPHIE FEDDE, A. B., Assistant Professor of Home Economics. Home Economics Hall.

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[1]Resigned.

[1]THEODORE THORSON, B. Sc., Assistant Professor of Dairy Husbandry. Dairy Industry Hall.

KATHERINE CRANOR, B. Sc., Diploma Academy DeCoupe, Paris, France, Assistant Professor of Home Economics. Home Economics Hall.

CURRY WATHAN WATSON, B. Sc., A. M., Leader Junior Section and Assistant Professor of Agricultural Extension. *(Extension Service in co-operation with U. S. Department of Agriculture.)* Agricultural Hall 108.

EMMA NATHALIA ANDERSEN, A.M., Assistant Professor of Plant Pathology and Physiology. Plant Industry Hall 304.

EDWIN HENRY KRAUSE, B. Sc., Assistant Professor of Dairy Husbandry. *(Extension Service in co-operation with U. S. Department of Agriculture.)* Dairy Industry Hall 208.

[1]JULIA EMELINE LOUGHRIDGE, A. B., Assistant Principal of the School of Agriculture and Assistant Professor of Mathematics in the School of Agriculture.

MARY VIRGINIA ZIMMER, A. B., Assistant Principal of the School of Agriculture and Assistant Professor of Mathematics in the School of Agriculture. Agricultural Hall 207.

FLORA BULLOCK, A. M., Assistant Professor of English in the School of Agriculture. Agricultural Hall 301.

IVAN DALEY WOOD, A. M., Assistant Professor of Agricultural Engineering. *(Extension Service.)* On leave. Second Lieutenant, Aviation Section, Signal Reserve Corps.

DAVID HENRY PROPPS, B. Sc., Assistant Professor of Dairy Husbandry. *(Extension Service in co-operation with the U. S. Department of Agriculture.)* Dairy Industry Hall.

KENNETH FISHER WARNER, A. M., Assistant Professor of Animal Husbandry. *(Extension Service.)* Stock Judging Pavilion.

WILLIAM BARBOUR NEVENS, B. S., M. S., Assistant Professor of Dairy Husbandry. Dairy Industry Hall 208.

ARTHUR WALTON MEDLAR, B. Sc., A. M., Assistant Professor of Farm Management. Farm Management Hall 201.

JOHN LUITHLY, Assistant Professor of Dairy Husbandry.

J. W. ROVNER, Assistant Professor of Dairy Husbandry.

EMMA REED DAVISSON, in charge of Home Economics Extension Work with Women's Clubs. *(Extension Service in co-operation with U. S. Department of Agriculture.)* Agricultural Hall 109.

MARY ANN ROKAHR, A. B., Assistant State Leader of Home Demonstration Agents. *(Extension Service in co-operation with the U. S. Department of Agriculture.)* Agricultural Hall 109.

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[1]Resigned.

[1]FLOYD WAMBEAM, B. Sc., Agricultural Editor.

ROBERT ELLSWORTH HOLLAND, B. Sc., Assistant County Agent Leader. *(Extension Service in co-operation with the U. S. Department of Agriculture.)* North Platte.

JOHN L. GILMORE, B. Sc., Assistant County Agent Leader. *(Extension Service in co-operation with the U. S. Department of Agriculture.)* Valley.

[1]ROBERT PLATT CRAWFORD, A. B., Agricultural Editor. Agricultural Hall 204.

[1]MARY-ELLEN BROWN, B. Sc., Instructor in Home Economics.

CLARE BROWN CORNELL, Ph. D., Instructor of Cadet Band.

[1]MARY STANDERWICK VAN KIRK, Instructor in Home Economics.

[1]EARL GEORGE MAXWELL, A. M., Instructor in Dairy Husbandry.

ELMER LAMONT RHOADES, B. Sc., Instructor in Farm Management. *(Extension Service.)* Farm Management Hall 201.

[1]LEILA F. CORBIN, Instructor in Home Economics.

CLARA JEANETTE NELSON, A. B., Instructor in Geography.

[1]ROBERT CANN HIBBEN, B. S., Instructor in Dairy Husbandry.

[1]WILLIAM RABAK, B. Sc., Ph. G., Instructor in Agricultural Chemistry.

SARAH W. CANFIELD, A. B., Instructor in Home Economics. Home Economics Hall.

RUTH CURTISS, B. Sc. in H. E., Instructor in Home Economics. Home Economics Hall.

THEODORE TUNISON BULLOCK, A. M., Instructor in Economics. University Hall 101.

IDA AHRENS, B. Sc., Instructor in Home Economics. Home Economics Hall.

ARTHUR ANDERSON, B. Sc., Instructor in Agronomy. Dairy Industry Hall 307.

IRMA G. BOWEN, Instructor in Home Economics. Home Economics Hall.

ELISABETH LACEY, A. B., B. S., Instructor in Home Economics. Home Economics Hall.

GLAIDETH GAINEVERE DENNY, A. B., Instructor in German and History in the School of Agriculture. Agricultural Hall 304.

RUTH ODELL, A. B., Instructor in English in the School of Agriculture. Agricultural Hall 302.

ASTRED ALTHEA KJELSON, B. Sc., Instructor in Home Economics in the School of Agriculture. Home Economics Hall.

LETA BLANCHE LINCH, A. B., Supervisor of Practice Teaching in Home Economics and Instructor in the School of Agriculture. Home Economics Hall.

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[1]Resigned.

MATHILDA KATHERINE PETERS, B. Sc., Instructor in Home Economics in the School of Agriculture. Home Economics Hall.

MINNIE FRIED WATSON, Instructor in Normal Training in the School of Agriculture. Agricultural Hall 303.

JESSE FRANKLIN HENDRICKS, A. M., in charge of Farm Management Demonstrations. *(Extension Service in co-operation with U. S. Department of Agriculture.)*

ESTHER L. ORD, B. Sc., Instructor in Home Economics. *(Extension Service.)*

CLARENCE E. MICKEL, B. Sc., Instructor in Entomology. *(Extension Service.)*

ADA B. JOHNSON, B. Sc., Instructor in Home Economics. *(Extension Service.)*

MABEL STERNE, B. Sc., Instructor in Home Economics. *(Extension Service.)*

WALTER ELSWORTH HAGER, B. Sc., Instructor in Physics in the School of Agriculture. Experiment Station Hall 207.

WILLIAM E. ANDERSON, B. Sc., Instructor in Chemistry. Experiment Station Hall.

BENJAMIN HARRISON THOMPSON, B. Sc., Instructor in Dairy Husbandry. Dairy Industry Hall.

GLADYS WEIL SIMMONS, A. B., Instructor in Mathematics in the School of Agriculture. Agricultural Hall 305.

EDNA ELCENIA PERRIN, A. B., Supervisor of Study Room and Adviser to Girls in the School of Agriculture. Plant Industry Hall 110.

[1]LEONARD OWEN VOSE, M. A., Instructor in Agricultural Chemistry. Experiment Station Hall.

ALVA WILSON, A. M., District Supervisor of Agricultural Agents. County Agent Division. *(Extension Service in co-operation with the U. S. Department of Agriculture.)*

EDNA CLARA NOBLE, B. L., Library Assistant in charge of University Farm Library. Agricultural Hall.

ESTHER SANFRIEDA ANDERSON, M. A., Assistant in Geography. Nebraska Hall.

[1]PAUL HESDEN STEWART, B. Sc., Assistant in Agronomy. Dairy Industry Hall.

[1]WYLIE R. WARD, B. Sc., Assistant in Agronomy. Dairy Industry Hall.

[1]ESTELLA MAY ELLISON, Assistant in Home Economics. Home Economics Hall.

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[1]Resigned.

[1]MARY RODDY, A. B., Assistant in Home Economics. Home Economics Hall.

MARGARETE META KUNDE, B. Sc., Assistant in Physiology in the School of Agriculture. Veterinary Building.

FREDERICK GUSTAVE GROSSART, Landscape Gardiner.

[1]IDA LOUISE WHITE, A. B., Assistant in Physical Education in the School of Agriculture.

ARTHUR W. INGERSOLL, B. Sc., Assistant in Chemistry. Experiment Station Hall.

EDNA DeETTE GREEN, Assistant in Entomology. Plant Industry Hall.

ELBERT LLOYD TAYLOR, B. Sc., Assistant in Farm Management, Demonstration work. (Extension Service.)

MARTIN N. LAWRITSON, Assistant in Dairy Husbandry.

HELEN B. DAVIS, Assistant Chemist of the Experiment Station.

WILLIAM J. RUNNALLS, Instructing Mechanic in Agricultural Engineering. Agricultural Engineering Hall.

LEWIS RUNNALLS, Instructing Mechanic in Agricultural Engineering. Farm Machinery Hall.

SARAH LOUISE VINING, Supervisor of Cafeteria. Home Economics Hall.

JAMES COWAN, M. E., Superintendent of Experimental Substation, Valentine.

JAMES A. HOLDEN, B. Sc., Superintendent Experiment Substation, Mitchell.

SENATOR WILLIS PERIN, Farm Superintendent. Agricultural Hall 204.

### Standing Committees of the Faculties

Course of Study—Professors Bradford (chairman), Bruner, Wilcox, Chase, Frandsen, Loomis, Howard, Bengtson, Upson, Filley, the Dean.

Schedule of Classes—Professors Chase (chairman), Bradford, Zimmer, the Registrar.

Advanced Standing—The Chancellor (chairman), the Dean, the Inspector of High Schools.

Student Activities—Professors Frandsen (chairman), Wilcox, Howard, Gramlich, Loomis, Heppner, Hopt.

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[2]Resigned.

## PURPOSE OF THE COLLEGE OF AGRICULTURE

The College of Agriculture was established by an act of the legislature of 1909, reorganizing the colleges within the University. The purpose of this college is (1) to provide thoro instruction in the technical agricultural sciences, (2) to aid in the promotion of agriculture thru its secondary Schools of Agriculture, its Experiment Stations, and its Agricultural Extension work, and (3) to promote household arts thru its department of Home Economics.

## GROUPS OF STUDY

**The General Agricultural Group** meets the needs of those students who wish to prepare themselves for the pursuit of scientific investigation along some line of agriculture, such as agricultural chemistry, agronomy, animal husbandry, animal pathology, dairy husbandry, entomology, horticulture, plant pathology and physiology, and other technical subjects related thereto. This group should also appeal to those who desire to prepare themselves for teaching in high schools or in agricultural colleges and who desire agricultural training to meet the demands of the schools requiring that instruction be given in agriculture. As a course in general education for students who expect to follow business pursuits or to continue still further the study of some technical agricultural subject, this course is offered as a suitable foundation.

**The Agricultural Practice Group** (a two-year course leading to a certificate of proficiency in agriculture upon completion).

This course is intended to meet the need of those students who desire to return to the farm and who can spend only two years in college work. The course is almost wholly a study of practical agriculture.

The student may register in the five principal agricultural departments during his first term in college and may continue this practical work thru the entire two years.

Upon completing the course and satisfying the requirements in practical farm experience, a certificate will be granted for proficiency in practical agriculture.

Should the student desire to continue in college more than two years, he must then enter the General Agricultural Group and complete the science requirements before continuing in his agricultural subjects.

Persons choosing the Agricultural Practice Group will find it to their advantage to live near the University Farm, since all of this work will be offered at the Farm campus. The student will not be required to go to the City campus for any work except for registration at the beginning of the semester.

**The Home Economics Group** leads to the degree of Bachelor of Science in Home Economics. Besides those subjects which have to do

especially with the home, it includes studies in science, language, history and other branches affording a good general education. This department is housed in Home Economics Hall, situated on the University Farm campus.

Students in this group carry their academic courses on the City campus and for their convenience as many of the lectures as possible are given there.

## FACILITIES FOR INSTRUCTION

To illustrate properly the work in the various departments in agriculture, the college is provided with a farm of 480 acres which is used for experimental purposes and to illustrate methods in farm practice, showing the effect of rotations and methods of treatment on the physical and chemical properties of the soil and on its productiveness. The department of Horticulture maintains an extensive orchard and garden for demonstrating horticultural methods and practices. The departments of Animal Husbandry and Dairy Husbandry keep extensive herds for instruction in types of farm animals. The agricultural plant, aside from lands, consists of eight main buildings and several barns and accessory buildings to complete the work and efficiency of the plant. Agricultural Hall is used for administration, library, and general classrooms. Experiment Station Hall furnishes laboratories for Soils, Physics and Agricultural Chemistry. The Judging Pavilion furnishes stock judging laboratories and grain judging laboratories, with exceptional facilities for work. The new Agricultural Engineering Building, which has been under construction for the past year, is nearly completed. It will be extensively equipped for the most advanced instruction and investigation attainable in the country.

In the basement there will be an earth plat twelve feet wide, three feet deep and one hundred fifty feet long. In connection with this it is planned to provide special apparatus for testing tillage and tractor machinery. A large draft wagon apparatus will be used for testing rolling friction as applicable to highways.

In the automobile laboratory will be placed a dynamometer for testing automobiles. The farm motor laboratory will contain a tractor dynamometer for use with traction engines. Besides these items there will be a hydraulic room designed to test farm pumping plants; a feed grinding and shelling room for testing grinding, threshing, shelling and elevating machinery, etc. The equipment for the new building will be well suited to the demands of the regular courses of instruction and will provide opportunity for advanced study and research.

Plant Industry Hall furnishes class and laboratory facilities for Horticulture, Entomology, Experimental Agronomy, and Plant Path-

ology and Physiology. Dairy Industry Hall furnishes laboratories for instruction in buttermaking and cheesemaking, market milk and ice cream laboratories and temporarily houses the instruction in Farm Crops. Home Economics Hall furnishes laboratories for instruction in the preparation of food, and in clothing and home furnishing. All of the technical departments giving instruction have excellent laboratory facilities and depend upon the laboratory method to give definiteness and efficiency to their instruction.

## ADMISSION TO THE COLLEGE OF AGRICULTURE

*Credentials which are accepted toward admission to the University become the property of the University and are kept permanently in the files. All credentials must be filed with the Registrar. They should be mailed at least two months before the beginning of any semester or session to insure prompt attention. Attention to this request will save applicants much inconvenience.*

Admission to the University is gained only thru matriculation in one of the eight colleges (the three school are included in the colleges).

Admission may be (1) to freshman standing, (2) to advanced standing, and (3) as adult special students.

## ADMISSION TO FRESHMAN STANDING

Admission to freshman standing may be (1) *complete*, meeting all requirements of the College, or (2) *conditional*, deficient in required subjects. For complete admission applicants must present 30 entrance points, for conditional admission a minimum of 28 entrance points, from one of the approved sources given below under "Admission by Certificate," and in the subjects for the amount indicated below under "Entrance Subjects."

An *entrance point* is given for the work of a class holding five recitations a week, of 40 to 50 minutes each, for at least eighteen weeks. In laboratory courses an entrance point is given for three recitations and two double periods of laboratory work (under the supervision of a competent instructor) each week for at least eighteen weeks. In laboratory courses without recitation, an entrance point is the equivalent of fifteen single periods each week.

Students admitted conditionally must remove the conditions at the earliest possible opportunity. Degrees will not be granted until such conditions are removed.

Entrance credit, in addition to that presented when admission is granted, to be accepted must be submitted within one year from date of matriculation.

College credit is given for work done in a secondary school only

upon examination and then for a maximum of nine hours[1] elective credit and only in chemistry, Greek, mechanical drawing, solid geometry, trigonometry, third and fourth year German, French and Latin and fourth year English. To receive college credit for such work, application must be made at the time of first registration in the University and the examination must be taken by the end of the first semester.

Applicants for admission to freshman standing may be admitted (1) *by certificate* and (2) *by examination.*

### Admission by Certificate

Admission may be had by certificate (a) from the secondary schools on the accredited list of the University and (b) from the secondary schools which are members of the North Central Association of Colleges and Secondary Schools, and of Accrediting Associations of equal rank.

*Applicants, who are graduates from secondary schools accredited to the University,* must file their "entrance cards" with the Registrar or indicate the name of the school and the year of graduation when applying for admission.

*Applicants, who are not graduates from secondary schools accredited to the University,* must secure from the Superintendent or Principal an official certified statement of record showing the length of time of attendance, and for each course the length of the course in weeks, the number of recitations per week, the length of recitation and the grade secured and also a recommendation from such Superintendent or Principal that the applicant be admitted before graduation from the high school and file the same with the Registrar.

*Applicants from secondary schools which are members of the North Central Association of Colleges and Secondary Schools, and of Accrediting Associations of equal rank* must secure an official certified statement of record showing the length of time of attendance, and for each course the length of the course in weeks, the number of recitations per week, the length of recitations and the grade secured and also whether or not the applicant is a graduate and file the same with the Registrar.

*Applicants for admission to the College of Agriculture as graduates of the University Preparatory Course of the School of Agriculture* must secure from the Principal of the School of Agriculture an official certified statement of record and file the same with the Registrar. The above named applicants are admitted to complete freshman standing in the College of Agriculture without examination.

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[1]An "hour" is given for each one hour recitation or lecture which presupposes two hours of preparation, or for the equivalent of a three hour laboratory period during each of the eighteen weeks of a semester.

### Admission by Examination

All applicants other than those stated above for admission to the University are required to take entrance examinations. Entrance examinations are offered by the High School Inspector during the entire week in which registration occurs at the beginning of each semester.

### Entrance Subjects

The 30 entrance points required for complete admission to freshman standing and the 28 entrance points required for conditional admission to freshman standing, must be presented in the following subjects for the amount indicated; the time element as indicated above in the definition of an entrance point is essential:

| Required Subjects | Points |
|---|---|
| English | 4 |
| History (European) (a) | 2 |
| Language (Foreign) (b) 6 to 4 | 10 |
| Mathematics (algebra and geometry) 4 to 6 | |
| Science (laboratory) (c) 2 to | 4 |
| **Elective Subjects** | |
| Other subjects taught in an approved manner in an accredited secondary school | 12 |
| Total | 30 |

(a) History—
It is recommended that Greek and Roman history be offered in meeting the European history requirement.

(b) Language—
Additional English, history or laboratory science may be offered in place of foreign language.

(c) Science—
For admission to this College both physics and chemistry are desirable but a full year of either physics or chemistry should be offered. Students offering only a half year of either cannot continue their study in the College without registering for the elementary course.

## ADMISSION TO ADVANCED STANDING

Applicants for admission from other universities or colleges must file with the Registrar (1) *a letter of honorable dismissal;* (2) *an official certified statement of the college work already accomplished* showing the length of time of attendance and for each course the length of the course in weeks, the number of recitations or lectures per week, the length of the recitation or lecture, if a laboratory course the amount of time in laboratory per week and the grade secured, accompanying the same with a marked catalog of the institution in which it was done; (3) *an official certified statement of the record*

*of secondary school work* showing the length of time of attendance, and for each course the length of the course in weeks, the number of recitations per week, the length of recitation and the grade secured, satisfying the admission requirements of that college of the University, which the applicant seeks to enter.

Applicants for admission to advanced standing are of two classes: (1) those entering from universities and colleges whose requirements for admission and graduation are equal to those of this University, who are given full credit in this University in so far as their work applies not to exceed senior standing; (2) those entering from colleges whose requirements for admission and graduation are not equal to those of this University, who are given less than full credit in proportion to the rank of the institution from which they enter.

In every instance a student shall complete in residence and in the senior year at least thirty of the one hundred and twenty-five hours required for graduation.

Advanced credit, in addition to that presented when admission is granted, to be accepted must be submitted for approval within one year from date of matriculation.

## ADMISSION AS ADULT SPECIAL STUDENTS

Persons at least twenty-one years of age, who do not fulfill the regular admission requirements for freshman standing, but who offer an academic training substantially equivalent, or whose incomplete academic training has been duly supplemented by experience in teaching or other practical preparation, or by special attainment in some particular line, may be admitted to the general colleges as Adult Special students under such conditions as shall be deemed wise in each individual case to do such work as they are prepared to do. Adult Special students are subject to the same University regulations as regular undergraduates, and they may become candidates for graduation upon fulfilling all University requirements, including those for admission to freshman standing. In case of failure to maintain a good standing in the studies registered for, this privilege is withdrawn, and an Adult Special student suspended for failure in University work may be readmitted only upon meeting the requirements for admission to freshman standing. No person is permitted to abuse the privilege of registering as an Adult Special student to secure merely nominal membership in the University, whether for social purposes or to engage in athletics, or for any other reason. The requirements in Military Science and Physical Education apply to Adult Special students as well as to candidates for degrees.

## REGISTERING

Registration in the College of Agriculture occurs on the City Campus during the regular registration days of each semester and each student[1] is given a ticket entitling him to a definite time in which to register. To promote prompt registration a fee of $3 is charged a student who, unless permitted to do so by the Registrar, seeks to register after these days. Registration is not complete until the fees are paid and the application for registration filed in the office of the Registrar. A fee of fifty cents is charged for any change whatever in registration, (changing subjects, adding or dropping a subject), unless such change is made by direction of University authorities and thru no fault of the student. A student changing from one College to another must pay a new matriculation fee of $5 and such change may not be made without written permission to the Registrar from the Dean of each College concerned. A student may change from one group of studies to another on written permission to the Registrar from the Dean. Upon the payment of the required fee, a student is allowed to drop any subject for which he has been regularly registered on written permission of the Adviser approved by the Dean of the College. A first and second year student may not register for more than one one-hour subject nor for more than five subjects exclusive of Military Science and Physical Education in any one semester unless required by the prescribed program; a third and fourth year student may not register for more than two one-hour subjects in any one semester. A regular student is not permitted to register for less than twelve hours without permission from the Dean. A first year student may not register for more than 17 hours. A student above the first year who has attained an average of 80% during the previous year may register for a maximum of 18 hours. Credit is not given for work in excess of the maximum of 18 hours a semester or for work pursued without registration at the time when pursuing the same. A student may not attend classes for which he is not registered except to remove a "condition" or "incomplete." A student who fails in a required subject must register for that subject the first time it is offered. A student who receives a "condition" or "incomplete" must remove that "condition" or "incomplete" by the end of the first seemster in which that subject is again offered or it becomes a failure; extensions of time may be granted by instructors to students for removing a "condition" or "incomplete."

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[1]Freshmen schedules are arranged for the year. Their registration for the second semester is in general merely a formality consisting in the payment of the necessary fees.

## FEES AND EXPENSES

**Fees.** The incidental, library and matriculation fees will not be refunded in any case except when charged thru official error. No laboratory or tuition fees or any portion thereof will be refunded to a student after the beginning of the fourth week from the date of his registration and refund will be made only upon written application to the Registrar, stating reasons and approved by the head of the department concerned, presented at the time of withdrawal from class or from University together with the receipt for fees issued by the Secretary. Except in extraordinary cases not more than one-third of the laboratory fees will be refunded after the student has attended the laboratory.

The Secretary does not cash personal checks for accommodation. Checks on personal accounts will be received when written for the amount of the fees only. Parents or guardians are advised to write checks for students' fees and their other expenses separately; if this is not done, students should deposit in local banks and give their own checks for the amount of fees. Misapprehension as to the amounts charged for fees is thereby avoided.

The schedule of fees in the College of Agriculture is as follows:

Matriculation (payable on entering each college) ..... $5.00
Being statutory, this fee cannot be refunded except when collected in error. It is also charged any student changing membership from one College to another.

Incidental, each semester ..... 3.00

Library (charged to each student who does not pay a laboratory fee), each semester ..... 1.00

Late registration (after registration days) ..... 3.00

Re-registration (including change of registration) ..... 0.50

Special examination, each course ..... 1.00

Diploma, (undergraduate) ..... 5.00

Diploma, in absentia, (undergraduate) ..... 15.00

Certificate ..... 2.00

### LABORATORY FEES

Agricultural Engineering—Courses 5, 6, 7, 14, 24, 31, 32, 33, 34, $1; 1, 2, $4; 3, 4, 8, 9, 10, 12, 17, 18, 22, $3; 15, $5.

Agronomy—Courses 1, 2, 51, 52, $1.

Chemistry—Courses 1, 2, $5; 3, 4, $4; 31, $10; 46, $6; 123, for each credit hour a semester, $2.

Dairy Husbandry—Courses 1, 2, 9, $2; 4, 8, 10, 12, $3; 7, 13, $4.

Entomology—Courses 1, 2, 3, 4, 7, 8, 10, 11, $1; 5, 6, $2; 15, 16, 17, 18, for each credit hour a semester, $1.

Fine Arts—Course 15, $2.

Geography—Courses 1, 2, 6, 52, $1.
Home Economics—Courses 1, 2, 8, 9, 10, 18, $2; 3, 4, 6, $6; 5a, 7, 11, 12, 23, 26, $3; 24, $1; 25, $8.
Horticulture—Course 5, $3; 20, 23, 24, $2; 11, 12, 17, $1.
Physiology—Courses 1, 2, $5.
Plant Pathology and Physiology—Courses 101, 102, $2; 105, 108, 117, 118, $3; 115, 116, for each credit hour a semester, $1; 125, 126, 127, 128, for each credit hour a semester, $2.
Zoology—Courses 11, 12, $2; A, $4.

**Expenses.** In Lincoln, board and lodging may be secured in private families for from $4.50 to $6.00 a week. There are also numerous student clubs. The Young Men's Christian Association of the University keeps lists of boarding places and also maintains an employment bureau, the services of which are free to all students. In a city the size of Lincoln there are many opportunities for students to defray at least a part of their expenses. The University does not, however, guarantee employment.

## REQUIREMENTS FOR GRADUATION

**University Credits.** For the degree of Bachelor of Science, 125 University "credit hours" are required. A course receives one credit hour for each one-hour recitation or lecture and two hours preparation or laboratory period required for each of the eighteen weeks of a semester.

For a certificate in Agricultural Practice 62 prescribed "credit hours" together with one year of successful farm experience are required.

All subjects required for graduation are offered at the Farm campus but the students may elect sciences and academic subjects at the City campus. Elective subjects may be taken at the Farm campus, or at the City campus in the College of Arts and Sciences.

## THE GENERAL AGRICULTURAL AND HOME ECONOMICS GROUPS

Students who have satisfied all matriculation requirements and completed the courses in the prescribed groups together with sufficient electives to make a total of 125 University credit hours, will be granted the degree of Bachelor of Science in Agriculture or Home Economics. No student is recommended for a degree who is not within 18 hours of this requirement at the beginning of his last semester.

All students are required to register according to the outlined courses.

**Required Subjects**—Each candidate for the degree of Bachelor of Science in Agriculture or Home Economics in the College of Agriculture must complete the following subjects:

| For the General Agricultural Group: | Hours |
|---|---|
| Agriculture | 27 |
| Major subject (Agriculture or Science) additional | 20 |
| Elective subjects[1] | 20 |
| Biology (Botany or Entomology[2]) | 12 |
| Chemistry | 11 |
| Biological, Physical or exact Science | 8 |
| English (Rhetoric 1, 2 and Rhetoric or English Literature) | 10 |
| Economics 1, Farm Management 11 or 12 | 5 |
| History of Vocational Education | 2 |
| History or Sociology | 6 |
| Military Science | 4 |
| Total | 125 |

| For the Home Economics Group[3] | Hours |
|---|---|
| Foreign Language, ancient or modern | 10 |
| English[4] (Rhetoric and English Literature) | 10 |
| History | 6 |
| Philosophy, Sociology or Political Science and Education | 6 |
| | Hours |
| Chemistry[5] | 16 |
| Fine Arts 15, 16 | 3 |
| Education | 2 |
| Biological Sciences (Botany or Zoology, Bacteriology and Physiology | 12 |
| Physical Training | 5 |
| Home Economics | 30 |
| Electives | 25 |
| Total | 125 |

**Science Requirements.** Students selecting the Agricultural Group will be required to complete 27 hours of prescribed agriculture, 20 hours

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[1]Elective subjects may be taken in the departments at the University Farm or may be taken in academic or science subjects at the City campus.

[2]Zoology may be taken at the City campus in place of Botany or Entomology.

[3]For additional requirements for the University Teachers' Certificate see pages 25-27.

[4]Rhetoric 1, 2 required.

[5]This requirement is increased to 20 hours if less than two points entrance credit in Chemistry is offered.

in some major subject, or in two minor subjects, and 31 hours additional in Natural or Physical Science. Students selecting the Home Economics Group will be required to take 30 to 36 hours of Home Economics with 28 to 32 hours of Biological or Physical Science.

**Military Science Required.** Four hours of military science (courses 1, 2, 3, 4) are required of all men students. Only credibly attested physical disability or membership in a religious organization whose creed forbids participation in warfare in any form (on the part of parent in case of a minor) is accepted as excusing from the requirements in military science. Those excused for conscientious scruples are required to do work in Physical Education equivalent in amount. Unless excused or reprieved, each undergraduate man must fulfill this requirement in freshman and sophomore years. A man excused from this requirement (whatever the reason) must still, in order to graduate, obtain the full number of hours credit required of other candidates for the degree sought. Thoro drill elsewhere than at the University may, as in the case of any other study, on evaluation, be credited to a student in lieu of a like amount of military science at the University. Such credit by commutation, however, in no case exceeds a total of four hours.

**Major Subjects.** Not later than the beginning of the Junior year each student in the College of Agriculture must select some one department of the college in which he will take a major or two minors of not less than 20 hours nor more than 30 hours except in the Home Economics Group in which 36 hours may be taken. Upon approval of the Head of the Department in which the major work is done, closely related subjects may be offered to make up the 20 hours minimum.

## TEACHERS CERTIFICATES UNDER SMITH-HUGHES ACT

### First Grade State Certificates

### Requirements for Teachers of Agriculture

| | Hours |
|---|---|
| General courses in Agriculture | 27 |
| Two minor subjects (in two departments in Agriculture) additional | 20 |
| Education | |
| History of Vocational Education — 2 | |
| Agricultural Education — 2 | |
| Special Methods in each of two agricultural departments offering approved courses in methods — 2 each | |
| General Psychology — 3 | |
| Educational Theory and Practice — 3 | |
| Educational Psychology or Child Study — 2 | 16 |
| Science (Botany, Entomology and Zoology) | 12 |
| Chemistry | 10 |

| | |
|---|---|
| Biological, Physical or Exact Science | 8 |
| English (Rhetoric 1 and 2 and six hours additional Rhetoric or English Literature) | 10 |
| Rural Economics and Rural Sociology | 6 |
| Elective subjects | 12 |
| Military Drill | 4 |
| | 125 |

Two years of practical farm experience or its equivalent will be required for certificates to teach under the Smith-Hughes Act.

**Requirements for Teachers of Home Economics**

| Technical Subjects | Hours |
|---|---|
| Food Study | 12 |
| Clothing Study | 12 |
| House Administration (includes supervised home management) | 6 |
| House planning | 1 |
| Emergencies and Home Nursing | 1 |
| | 32 hours |
| Related Sciences and Arts | |
| [1]Chemistry | 16-20 |
| Physiology | 4-6 |
| Bacteriology | 2 |
| Applied Design | 3 |
| | 25-31 hours |
| Education | |
| Psychology | 3-6 |
| Educational Psychology or Child Study | 2-3 |
| History of Vocational Education | 2 |
| Theory and Practice of Teaching | 2 |
| Special Methods in Home Economics | 4 |
| Practice Teaching in Home Economics | 2-3 |
| Additional subjects to make | 125 hours credit |

Two years of practical experience in the home including a period of actual Home Management or its equivalent will be required for a certificate to teach under the Smith-Hughes Act.

**University Teachers Certificate**

The University Teachers Certificate is granted only to students who (1) maintain an average of at least 80 per cent in the group of sub-

[1]Twenty hours of Chemistry are required if one unit is not offered for entrance.

In addition to the above, six hours of Biology and three hours of sociology are required.

jects to be taught and a high average in all other subjects in the collegiate course, (2) show special fitness for teaching. This certificate entitles its holder to teach in any high school in Nebraska and is valid in many other states; after three years' successful experience in Nebraska it may be converted into a life certificate by the endorsement of the State Superintendent.

**Requirements.** 15 hours of Education; 6 hours of Philosophy.

1. The candidate must hold the Bachelor's or Master's degree from the University.

| | Hours |
|---|---|
| 2. Psychology 1 and 2 | 6 |
| Education | |
| History of Education 1 and 2 | 6 |
| Educational Psychology 16 | 2 |
| Educational Theory and Practice | 3 |
| For Teachers of Agriculture | |
| Agricultural Education 2 | 2 |
| Special Methods | 2 |
| For Supervisors of Home Economics | |
| Home Economics 13 and 14 | 4 |

3. A major of not less than 30 hours and a minor of not less than 18 hours may be taken in the subjects of Domestic Science and Domestic Art.

### The First Grade City State Teachers Certificate

**Requirements**—12 hours of Education; 3 hours of Philosophy.

| General | Hours |
|---|---|
| Psychology 3 | 3 |
| Education | |
| History of Modern Education 2 | 3 |
| Educational Theory and Practice | 3 |
| Educational Psychology or Child Study | 2 |
| For Teachers of Agriculture | |
| Agricultural Education 2 | 2 |
| Special Methods | 2 |
| For Supervisors of Home Economics | |
| Home Economics 13 and 14 | 4 |

NOTE—The first grade city state teachers certificate may be converted into a life certificate by the endorsement of the State Superintendent after three years successful experience.

**Advisers.** Every student[1], before registering, must consult an Adviser in regard to his schedule and secure his Adviser's signature to this schedule.

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[1]Freshmen schedules are arranged for the year. Their registration for the second semester is in general merely a formality, consisting in the payment of the necessary fees.

Freshmen and other entering students shall report to the Dean of the College for assignment to an Adviser. For the Freshman and Sophomore years, a special group of Advisers is provided, in order that students may be assisted to complete the required subjects as fully as possible within these years. At the end of his second year, any student may select as his Adviser any member of the professorial rank in the department of the College of Agriculture in which he elects to take his Major work. The Dean of the College constitutes a head Adviser for each student within the College. The Dean of Women is special Adviser to all women students in the College.

**Absence or Withdrawal.** A leave of absence for a short time may be granted a student by the Dean. This leave is merely a justification for absence and not an excuse from any work. Students not previously excused shall make request for excuse for absence within two weeks after the absence ceases. If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a semester, the Registrar grants him permission to do so. Students in good standing who are not minors are given honorable dismissal from the University at their own request; minors, at the request of their parents or guardians.

## ORDER OF COURSES IN THE GROUPS OF STUDY

### GENERAL AGRICULTURAL GROUP

| FIRST YEAR | First Semester Hours | Second Semester Hours |
|---|---|---|
| Biology[1] (Plant Pathology and Physiology 101, 102 or Botany 1, 2 or Entomology 3, 4) | 3 | 3 |
| Physical Science (Chemistry[2] 3, 4) | 3 | 3 |
| Rhetoric 1, 2 | 2 | 2 |
| Animal Husbandry 1 | 4 | |
| Agricultural Engineering 1 (Carpentry), 2 (Forge Work), or 3 (Farm Machinery) | 2 | 2 |
| Geography 52 | | 3 |
| Dairy Husbandry 1, 2 | 2 | 2 |
| Military Science 1, 2 | 1 | 1 |
| | 17 | 16 |

[1]Botany 1, 2 and Zoology are offered at the City campus. Plant Pathology and Physiology 101, 102 and Entomology 3, 4 are offered at the Farm campus.

[2]Where less than 2 points Chemistry is offered for entrance, Chemistry is taken as a five hour subject and Dairy Husbandry or Agricultural Engineering omitted.

Modern language (French or German) may be substituted for 5 hours of agricultural subjects in each semester.

| SECOND YEAR | First Semester Hours | Second Semester Hours |
|---|---|---|
| Chemistry 31 | 5 | |
| Biology (Plant Pathology and Physiology, Botany, Entomology, Zoology 11, 12) | 3 | 3 |
| Agronomy 1 (Crops), 51 (Soils) | 3 | 4 |
| Horticulture 2 | | 2 |
| Electives[1] | 4 | 6 |
| Military Science 3, 4 | 1 | 1 |
| | 16 | 16 |
| **THIRD YEAR** | | |
| Farm Management 3 | 3 | |
| History of Vocational Education | 2 | |
| Major subjects (Agriculture or Science) | 5 | 5 |
| Economics 1, Farm Management 11 or 12 | 3 | 2 |
| Electives[1] | 3 | 9 |
| | 16 | 16 |
| **FOURTH YEAR** | | |
| History or Sociology | 3 | 3 |
| Major subjects (Agriculture or Science) | 5 | 5 |
| Electives[1] to complete 125 hours credit | 6 | 6 |
| | 14 | 14 |

## TWO YEAR AGRICULTURAL PRACTICE GROUP

### Offered at the University Farm

Students in this course should register for Rhetoric 1, 2 and Military Science 1, 2, 3, 4 which are absolute requirements. It is expected that students will continue work the second semester in each department in which they have done work the first semester. Students continuing in the College more than two years must enter General Agricultural Group and complete science requirements before continuing their agricultural subjects.

[1]Additional Rhetoric or English Literature, 6 hours required. Physics 11, 12, or Mathematics 1, 2 offered at the City campus may be elected.

| FIRST YEAR | First Semester Hours | Second Semester Hours |
|---|---|---|
| Animal Husbandry 1 (Breeds and Judging) | 4 | |
| Animal Husbandry 2 (Judging), 4 (Feeding) | | 4 |
| Agronomy 1 (Forage Crops), 2 (Cereals) | 3 | 4 |
| Agricultural Engineering 1 (Wood Work), 2 (Forge Work) | 2 | 2 |
| Dairy Husbandry 1, 2 (Principles of Dairying) | 2 | 2 |
| Horticulture 1 (Vegetable Growing), 2 (Fruit Growing) | 2 | 2 |
| Rhetoric 1, 2 (required) | 2 | 2 |
| Military Science 1, 2 (required) | 1 | 1 |
| Optional Freshman (Agricultural) Subject | 2 | 2 |

The student may register for a maximum of 17 hours.

Chemistry 1, 2 or 3, 4 or Plant Pathology and Physiology 101, 102 are optional with any of the above agricultural subjects except Military Science and Rhetoric.

| SECOND YEAR[1] | | |
|---|---|---|
| Agronomy 51, 52 (Soils) | 4 | 4 |
| Farm Management 3 (Farm Organization), 2 (Cash Accounting) or 12 (Distribution of Agricultural Products) | 3 | 2 |
| Animal Husbandry 13, 14 (Live Stock Management) | 2 | 2 |
| Agricultural Engineering 3 (Farm Machinery), 4 (Farm Motors) | 2 | 2 |
| Animal Pathology 1 | 3 | |
| Entomology 8 | | 3 |
| Dairy Husbandry 3 (Milk Production), 4 (Butter Making) | 2 | 3 |
| Horticulture 11, 13 or 15 (First Semester), 12, 20 or 16 (Second Semester) | 3 | 3 |
| Rhetoric 5a, 6a | 3 | 3 |
| Military Science 3, 4 (required) | 1 | 1 |

The student may register for a maximum of 17 hours.

Chemistry 31 or Plant Pathology and Physiology 105 and 108 are optional with agricultural subjects.

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[1]A student may register for the first year's work in any department above instead of the work scheduled if he does not have credit in the earlier courses.

## HOME ECONOMICS GROUP

| FIRST YEAR | First Semester Hours | Second Semester Hours |
|---|---|---|
| Home Economics 1, 2 (Sewing and Textiles) | 3 | 3 |
| Fine Arts 15, 16 (A and S)[1] | 2 | 1 |
| Rhetoric 1, 2 (A and S)[1] | 2 | 2 |
| Chemistry 3, 4 | 3 | 3 |
| Language, Ancient or Modern (A and S)[1] | 5 | 5 |
| Physical Education 21, 22 (A and S)[1] | 1 | 1 |
| | 16 | 15 |

[2]FIRST YEAR FOR STUDENTS WHO HAVE NO ENTRANCE CREDITS IN CHEMISTRY

| | | |
|---|---|---|
| Home Economics 1, 2 (Sewing and Textiles) | 3 | 3 |
| Fine Arts 15, 16 (A and S)[1] | 2 | 1 |
| Rhetoric 1, 2 (A and S)[1] | 2 | 2 |
| Physical Education 21, 22 (A and S)[1] | 1 | 1 |
| Chemistry 1, 2 | 5 | 5 |
| History or other required subject | 3 | 3 |
| | 16 | 15 |

SECOND YEAR

| | | |
|---|---|---|
| Home Economics 3, 4 (Elementary Food Study) | 4 | 4 |
| Chemistry 31, 46 | 5 | 5 |
| Botany 1, 2 (A and S)[1] or Zoology 11, 12 (A and S)[1] or Plant Pathology and Physiology 101, 102 | 3 | 3 |
| English Literature 1, 2 (A and S)[1] | 3 | 3 |
| Physical Education 9 (A and S)[1] | | 1 |
| Physical Education 23, 24 (A and S)[1] | 1 | 1 |
| | 16 | 17 |

[1]Given in College of Arts and Sciences.
[2]The requirements in foreign language must be fulfilled later.

| THIRD YEAR | First Semester Hours | | Second Semester Hours |
|---|---|---|---|
| Home Economics 6 (Dietetics) | | | 4 |
| Home Ecoonmics 7, 8 (Textiles and Clothing) | 3 | | 3 |
| Bacteriology 2a (A and S)[1] | 2 | | |
| Physiology 1, 2 (A and S)[1] | 2 | | 2 |
| Philosophy[2] 1, 2 (A and S)[1] or Philosophy 3 and Sociology or Economics | 3 | | 3 |
| Electives | 6 | | 4 |
| | 16 | | 16 |

| FOURTH YEAR | | | |
|---|---|---|---|
| Home Economics 9, 10 (Household Administration) | 3 | | 3 |
| Agricultural Engineering 33 | 1 | | |
| Education 7 (Child Study) or Educational Psychology 16 (A and S)[1] | 3 | or | 2 |
| History | 3 | | 3 |
| Electives | 6 | | 9 |
| | 16 | | 15 |

[1]Given in the College of Arts and Sciences.

[2]Philosophy 1 and 2 are required of candidates for the University Teachers' Certificate. Philosophy 3 is accepted from candidates for the First Grade City State Teachers' Certificate. See page 27.

## COURSES OF INSTRUCTION

Students are advised to consult the heads of departments before registering.

For additional courses that may be chosen to apply as "Electives" see "Courses of Instruction" of the College of Arts and Sciences, the College of Engineering, and the Teachers College.

Courses included between [] are not given in 1917-1918.

### AGRICULTURAL EDUCATION

Professor Bradford *(Head of Department)*

1. **History of Vocational Education**—A survey of the history of vocational education. The demand for the practical in education and the response on the part of the schools. Studies of vocational schools, pre-vocational courses in public schools, vocational guidance and the socialization of the course of study. Junior or senior year. Two hours attendance. Four hours preparation. Two hours credit. First semester. Bradford

2. **Agricultural Education**—The educational value of industrial and especially agricultural training; industrial training as applied to Nebraska and Nebraska problems; the part which the schools, rural and town, should take in education for rural life; courses of study and material for agricultural instruction in both rural and high schools; study of the preparation of the teachers of this work. Junior or senior year. Two hours attendance. Two hours credit. Second semester. Bradford

### AGRICULTURAL ENGINEERING

Professor Chase *(Head of Department)*, [1]Associate Professor Seaton, Associate Professor Brackett, Assistant Professor Baer, Assistant Professor Sjogren, Mr. W. Runnalls, Mr. Jose, Mr. L. Runnalls

PRIMARILY FOR UNDERGRADUATES

1. **Carpentry**—Practice with the care, use and adjustment of tools, exercises in bench work, farm equipment and farm building construction. Open to all. Six hours laboratory. Two hours credit. First and second semesters. Baer

2. **Forge Work**—Practice in forging, welding, tempering, chipping, and repairing of farm machinery. Open to all. Six hours attendance. Two hours credit. Second semester. W. Runnalls

[1]Temporarily acting head of Mechanical Engineering Department.

3. **Farm Machinery**—The practical study of all lines of agricultural implements, tillage, seeding, harvesting, threshing and fertilizing machinery. Open to all. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First and second semesters.
Brackett

4. **Farm Motors**—The practical study of farm motors, the horse, windmill, steam boilers, steam engines, traction engines, gasoline engines, electric motors. Open to all. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First and second semesters. Brackett, Sjogren

14. **Spraying Machinery**—The design of spraying outfits, practice with the gasoline engine, mixers and pumps, the study of nozzles. Must be taken in connection with Horticulture 5. Three hours laboratory. One hour credit. Second semester. Brackett

15. **Automobiles, Theory and Practice**—A study of automobiles, and other truck engines, ignition systems, carburetors, transmissions and differentials and the care and use of such machines. Open to all. Two hours attendance. Four hours preparation. Three hours laboratory. Three hours credit. First and second semesters.
Brackett, L. Runnalls

17. **Advanced Forge Work**—Course 2 continued. Special studies in welding with gas, in steel work and machine repairing. Prerequisite: Course 2. Six hours laboratory. Two hours credit. First semester.
Runnalls

18. **Advanced Carpentry**—Course 1 continued. Building construction, cabinet work and furniture making. Prerequisite: Course 1 or M. E. 1. Six hours laboratory. Two hours credit. Second semester.
Baer

24. **Graphics**—Studies in graphic representation of data, curve plotting, curve analysis, blocking and diagramming data, etc. Open to all but planned especially for agricultural students. One hour attendance and preparation. Two hours drawing. One hour credit. Second semester. Chase

FOR WOMEN

31. **Wood Work and Interior Finishing**—Practice at the bench with light carpenter tools and the care of edged tools for the home. Work in the construction of furniture, painting, oiling and finishing the same. Instruction in the designing, selecting and care of the interior finish. One hour attendance. Two hours practice. One hour credit. First semester. Baer

33. **House Planning**—A course in house design. Lectures cover arrangement of rooms, heating, lighting, ventilation, plumbing, sewage

disposal, water works, fireplaces, stairways, labor-saving devices, etc. To be taken in connection with Home Economics 9. One hour attendance. Two hours drawing. One hour credit. First semester.

Baer

FOR UNDERGRADUATES AND GRADUATES

5. **Rural Architecture**—The arrangement of farm buildings and the farmstead, preparation of plans for unimproved farms and for rearrangement and additions to buildings on improved farms. Design and production of working drawings for the various farm structures. Design of beams and columns, method of construction and use of materials in timber, masonry and reinforced concrete work. Engineers. Two hours attendance. Four hours preparation. Three hours drawing. Three hours credit. First semester. Sjogren

6. **Irrigation and Drainage Engineering (C. E. 12)**—Sources of water supply, canals, seepage, irrigation by pumping, surveys and designs, legal and economic principles. Drainage: Field and class work in land drainage, surveys and preparation of plans and estimates of excavation, material and labor costs, study of drainage laws. Advanced engineers only. Three hours attendance. Six hours preparation. Three hours drawing. Four hours credit. Second semester.

Stout, Sjogren

7. **Rural Architecture**—The arrangement design and construction of farm buildings with special emphasis on planning the home, the farmstead, horse barns, dairy buildings, barns and yards, hog houses, granaries, soils, machine sheds, ice houses, fences, etc. For advanced students other than engineers. Two hours attendance. Two hours preparation. Six hours field work and drawing. Three hours credit. First semester. Chase

8. **Irrigation, Drainage and Rural Highways**—Irrigation from the water user's standpoint, requirements for different crops, source of supply, canals, seepage, pumping irrigation. Drainage: Study of different systems and methods of installation,—practice in the use of surveying instruments both in drainage and general field work. Rural highways, road laws and the construction and maintenance of roads. Advanced students other than engineers. Prerequisite: Agronomy 51. Two hours attendance. Two hours preparation. Five hours field work and drawing. Three hours credit. Sjogren

9. **Advanced Farm Machinery**—Laboratory work in the testing of field machines under various conditions. The testing of grinders, shellers, twine, etc. Prerequisite: Courses 3 and 24. Six hours laboratory. Two hours credit. First semester. Brackett, Sjogren

10. **Advanced Farm Motors**—The construction of motor testing apparatus and the complete tests of farm motors, both in the field and

laboratory. Prerequisite: Course 4 or M. E. 10 and in connection with M. E. 16. Six hours laboratory. Two hours credit. Second semester. Brackett, Sjogren

11. **Domestic Engineering**—Studies in illumination and illuminating materials, freezing and heating materials, ventilating systems, water systems, sewerage and sewage disposal plants. Prerequisite: Physics 1 and 2 or 11 and 12; Chemistry 1 and 2. Three hours attendance. Six hours preparation. Three hours credit. Chase

12. **Domestic Engineering Laboratory**—Practice in plumbing, testing of fuels, heating systems, illuminating systems, ventilating systems, pumping systems, etc. Prerequisite: Course 11 or by permission. Six hours laboratory. Two hours credit. Chase, Sjogren

19. **Research Work in Rural Architecture, Farm Drainage and Rural Highways**—There is a broad field for original investigation in the following subjects; drainage, water supplies, lighting, heating, building materials, efficiency gained by proper arrangement of farm buildings, road construction and sewerage. Prerequisite: Courses 5 and 6 or 7 and 8. Six to fifteen hours laboratory or reading. Two to five hours credit. Chase, Baer, Sjogren

20. **Research Work in Farm Machinery, Farm Motors and Farm Equipment**—The large equipment of machinery in the department gives an excellent opportunity for testing both in the laboratory and in the field, standardizing, traction tests, calibration and economic tests of both farm machinery and farm motors. Prerequisite: Courses 3 and 4. Six to fifteen hours laboratory or reading. Two to five hours credit. Chase, Sjogren

22. **Normal Course in Manual Training**—An advanced course in carpentry which deals with laboratory equipment for small and large classes, with planning courses, with designing and working up exercises. Prerequisite: Course 1 or 31. Three hours laboratory. Three hours outside work. Two hours credit. Second semester. Baer

23. **General Mechanics**—A laboratory course in belt lacing, rope splicing, babbitting, soldering, pipe fitting and acetylene welding. Three hours laboratory. One hour credit. First semester. Sjogren

FOR WOMEN

32. **Wood Work and Interior Finishing**—Course 31 continued, but with hard woods. Prerequisite: Course 31. One hour attendance. Two hours practice. One hour credit. Second semester. Baer

34. **House Planning**—Course 33 continued. One hour attendance. Two hours drawing. One hour credit. Second semester. Baer

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## AGRICULTURAL EXTENSION

Professor Pugsley, Departmental Specialists

2. **Extension Methods**—A study of Agricultural Extension organization and work, and of the presentation of agricultural and home economics subjects by extension methods. Training given in the preparation and use of subject matter for extension instruction. Special emphasis is laid upon the value, preparation and use of illustrative and demonstrational material. Open only to juniors and seniors recommended by heads of departments in which they are majoring, or by special permission. Each hour of credit will require, in addition to the study of extension methods, the preparation, illustration and delivery before the class of a lecture on some subject to be agreed upon by student and head of department concerned. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Pugsley

## AGRONOMY

Professor Burr *(Head of Department)*, Professor Kiesselbach, (Experimental), Professor Hopt, Associate Professor Gaddis, Associate Professor Keim, Mr. Anderson and Assistants

Students should have or take at least one year's work in Botany and Chemistry. Courses are offered to meet the needs of (1) those students taking general courses, or interested in farm operations or the management of land; (2) those fitting themselves to be agricultural teachers or investigators.

### CROPS

1. **Forage Crop Management**—An elementary and general course in the management of common and important forage crops, with special reference to Nebraska conditions. Classification, distribution and adaptation of common forage plants. Methods by which good seed may be secured. The seeding, care, harvesting and best use of forage crops, including those used for pasture, studied in considerable detail. Special attention given to identification of forage crop plants and seeds also of the more common or dangerous adulterants and weed seeds found in same. Two hours lecture. Four hours laboratory. Three hours preparation. Three hours credit. First semester.

Hopt, Anderson, Assistants

2. **Cereal Crop Management**—An elementary and general course in the management of cereal crops with special reference to Nebraska conditions. Each of the great cereals studied with reference to adaptation, seed-bed preparation, seeding, cultivation and harvest. Improvement of field crop plants thru the simpler forms of breeding. Labora-

tory practice in identifying and describing the various types and varieties of cereals. Scoring, judging and grading grain. Two hours lecture. Four hours laboratory. Six hours preparation. Four hours credit. Second semester. Hopt, Anderson, Assistants

3. **The Minor Field Crops in Nebraska**—A critical study of such special, minor and new crops as broomcorn, sugarbeets, flax, hemp, buckwheat, soybeans, cowpeas, sweet clover, chick peas, feterita and Sudan grass. The culture of these plants, especially under Nebraska conditions, is taken up in considerable detail. The weaknesses and strong points as well as the special uses and adaptations of each of these crops are pointed out. Prerequisite: Courses 1, 2, 51 and 52. Two hours lecture. Four hours preparation. Two hours credit. First semester. Hopt

4. **Field Crop Plant and Practices**—The history and evolution of field crop plants and field crop practices. The relation of farming methods to food supply and human progress. The origin, domestication and evolution of field crop plants. Relationships, classification and nomenclature. Prerequisite: Courses 1, 2, 51 and 52. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

5. **Dry Farming—Environmental**—A critical study of soil and climate—the fundamental environmental factors which underlie dry farming. Rainfall, heat, humidity, wind, evaporation, altitude and latitude. Psychology in its relation to theory, practice and history in the dry farming country. Dry farming regions compared. Designed for students from western Nebraska and other nearby dry farming sections, and for students who are planning to locate in these regions. Two hours attendance. Four hours preparation. Two hours credit. First semester. Hopt

6. **Dry Farming—Practice**—Course 5 continued. A constructive study of dry farming problems and methods—as based on the recent experimental data and the everyday practice of old and successful dry farmers. Special emphasis is given to practice in the more central part of the "Great Plains Area." A discriminating study of the various cultural methods, and of the various groups, species, types and varieties of crops possible to use in dry farming. Selecting and breeding plants to meet certain dry farming conditions. Homesteading, pioneering and marketing. Farming for profit. Prerequisite: Course 5 or entrance by special permission. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

8. **Field Crop Technology**—Problems and methods relating to the more technical phases of field crops. Field crop experimentation, teaching and demonstration. The breeding of field crop plants. Gov-

ernment service. Intended only for students who are specializing in agronomy. Prerequisite: Courses 1, 2, 51 and 52. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

9. **Field Crop Products**—A study of the disposition of field crops in commercial and industrial forms. Seed and grain business. Manufacture of wheat, oats, corn, flax, alfalfa and other field crops into the various finished products. The work includes lectures and readings as well as visits to important commercial concerns. Two hours credit. First semester. Hopt

10. **Field Crop Management**—The management of the more important cereal and forage crops—with special reference to Nebraska conditions. A brief practical course for students who are not registered in the College of Agriculture and cannot take the more thoro courses 1 and 2. Students in the College of Agriculture may take this course only by permission of the instructor. Two hours attendance. Four hours preparation. No laboratory. Two hours credit. Second semester. Hopt

11. **Forage Crop References**—Assigned forage crop readings. A thoro study of Piper's "Forage Plants and Their Culture," and of various readings in other texts and bulletins. These text studies and reference readings are essentially those required as supplementary work in course 1. This course is open only to School of Agriculture students who have completed courses A, B, C and D, and whose records in the department are entirely satisfactory. Two hours attendance. Four hours preparation. Two hours credit. First semester. Hopt

12. **Cereal Crop References**—This course bears the same relation to course 2, that the course "Forage Crop References" does to course 1. The plan of the work and the prerequisite are the same in this course as in course 11. Two texts are used—Montgomery's "The Corn Crops" and Carleton's "The Small Grains." Two hours attendance. Four hours preparation. Two hours credit. Second semester. Hopt

17. **Laboratory Practice**—Practice in the teaching of laboratory classes in secondary school work. With the teaching is included the care and handling of necessary laboratory supplies. Registration only by arrangement with the instructor. Two hours credit. First semester. Hopt, Anderson

18. **Laboratory Practice**—Course 17 continued. Second semester.

21. **Crop Problems**—Special problems in crop investigation. Open only to men of adequate training and who are graduates or upper classmen. Registration only by arrangement with instructor. Credit according to work. First semester. Burr, Hopt

22. **Crop Problems**—Course 21 continued. Second semester.

SOILS

51. **General Soils**—A study of the physical properties of soils and their importance to plant growth. The origin of soils; the physical characteristics of surface soils and subsoils; soil regions of Nebraska; soil classification and mechanical analysis; soil structure and means of modifying it; soil water, its movement, use and control; soil temperature and aeration; tillage. The laboratory exercises are outlined to illustrate the more important properties of soils discussed in the lecture room. Two hours lecture. Four hours laboratory. Six hours preparation. Four hours credit. First and second semesters.

Gaddis and Assistants

52. **General Soils**—Course 51 continued. A study of plant food materials in soils and brief consideration of soil problems of importance to Nebraska farmers. Plant food elements and their availability; use and interpretation of chemical analyses; organic matter and its functions in the soil; care and use of farm manures; commercial fertilizers; crop rotations; micro-organisms; their importance and functions; soil problems. Prerequisite: Course 51. Two hours lecture. Four hours laboratory. Six hours preparation. Four hours credit. First and second semesters. Gaddis and Assistants

55. **Soil Management**—A practical course in the management of soils, with special reference to fertility. Field studies of acid and alkali soils and corrective measures for same; special study of lime in its different forms; a study of the effects of manuring, crop rotation and other methods of increasing soil fertility; management of meadow, pasture, orchard, garden and lawn soils. Prerequisite: Courses 1, 2, 51 and 52. One hour lecture. Field trips to be arranged. Two hours credit. First semester. Gaddis

56. **Soil Management**—Course 55 continued. Field studies of problems in soil physics. Soil moisture, including drainage and irrigation; erosion; sandy, clayey, gumbo and stony soils; hardpan; gravel; timber, river and island soils. Prerequisite: Courses 1, 2, 51 and 52. One hour lecture. Field trips to be arranged. Two hours credit. Second semester. Gaddis

63. **Soil Survey and Investigation**—A study of soil survey work as carried on by the United States Bureau of Soils and by various states. The soil survey in its relation to regional problems and to the need and method of experimentation; climatic and soil differences which should be considered in the interpretation of experimental data; investigational work in soils in the various states. Prerequisite: Courses 1, 2, 51 and 52. One hour lecture. Field practice in mapping soils. Two hours credit. First semester. Gaddis and Assistants

66. **Agricultural Lands**—A discussion of soil, climatic and economic conditions in different regions. Problems in the handling of worn lands

and in the opening up of new lands; opportunities in semi-arid regions, "cut-over" country, swamps and other marginal lands as compared with opportunities under more favorable conditions; possibilities of obtaining land in such marginal regions; opportunities under irrigation projects. Prerequisite: Courses 1, 2, 51 and 52. Two hours lecture. Two hours credit. Second semester. Burr, Gaddis

70. **Soils Education**—Soils instruction as a part of our educational system; methods of presenting the work; outlines for use in high school and grades; a critical examination of soils literature, including government and state bulletins, magazines and farm papers; preparation of bibliographies; the soils library. Designed for students preparing to teach under the Smith-Hughes act and for all interested in the examination and classification of soils literature. Prerequisite: Courses 1, 2, 51 and 52. Two hours lecture. Four hours preparation. Two hours credit. Second semester. Gaddis

71. **Laboratory Practice in Soils**—Practice in the teaching of soils laboratory work in secondary schools. Management of the storeroom; ordering and care of equipment and supplies. Registration only by arrangement with the instructor. Two hours credit. First semester. Gaddis and Assistants

72. **Laboratory Practice in Soils**—Course 71 continued. Second semester.

75. **Current Soils Literature**—A study of technical soil bulletins. Assigned readings in current issues of the leading Agronomic journals. Designed for assistants and graduate students majoring in soils. Prerequisite: Courses 1, 2, 51 and 52. One hour of reports and discussions. One or two hours credit. First semester. Gaddis

76. **Current Soils Literature**—Course 75 continued. Second semester.

79. **Soil Research**—Assignment of special problems in soils investigation for individual work. Reports and thesis required. Open only to seniors and graduate students. Registration by arrangement with instructor. Prerequisites: Courses 1, 2, 51 and 52. Credit according to work. First semester. Burr, Gaddis

80. **Soil Research**—79 continued. Second semester.

### Seminar

101. **Agronomy Seminar**—Presentation and discussion of various agronomic subjects. Reviews of the latest and most important literature and data in agronomy. One hour attendance. One hour credit. Prerequisite: Courses 1, 2, 51 and 52. Open only to juniors, seniors and graduates. First semester.

102. **Agronomy Seminar**—Course 101 continued. Second semester.

### Summer Session

201. **Agronomy**—A general course in soils and cereal crops, designed primarily for those preparing to teach agriculture in secondary schools. Laboratory practice with a series of carefully written exercises and prepared materials which have recently been made available to public schools. In this course it is the intention to present as much as possible of the fundamental courses 2 and 51. Five hours lecture. Twenty hours preparation and laboratory. Four hours credit. Summer session. Hopt, Gaddis

202. **Agronomy**—A course in forage crops and soils designed for those who have had Agronomy 201 and desire additional work in Agronomy. Prerequisite: Course 201. Five hours lecture. Twenty hours preparation and laboratory. Four hours credit. Summer session. Hopt, Gaddis

### Experimentation

PRIMARILY FOR GRADUATES

Students taking these courses must have completed all general courses in Agronomy and Farm Management.

301. **Investigation**—Satisfactory work on some special line of investigation with assigned readings. Six to twenty hours laboratory. Thesis required. Two to five hours credit. First semester. Kiesselbach

302. **Investigation**—Course 301 continued. Second semester.

303. **Methods of Investigation**—Compilation of experimental data. Correlation tables. Statistical methods. Six to twenty hours laboratory. Two to five hours credit. Kiesselbach

304. **Methods of Investigation**—Course 303 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## ANIMAL HUSBANDRY

Professor Gramlich *(Head of Department)*, Professor Mussehl (Poultry), Associate Professor Warner, (Extension Specialist), Assistant Professor Pier, Assistant Professor Jenkins

PRIMARILY FOR UNDERGRADUATES

1. **Market Type of Live Stock**—A study of the types of market animals. Specimens representing the various classes of feeder and finished stock used in the classroom for judging purposes. The study of carcasses illustrated by meat-cutting demonstrations. The lecture

work will embody a study of the qualifications necessary to good carcasses and of the methods of handling live stock at market centers. Two hours lecture. Four hours judging. Six hours preparation. Four hours credit. First and second semesters. Pier, Jenkins

2. **Judging Breeding Animals**—This course is a continuation of course 1 except that classes of breeding animals are judged rather than fat specimens of each type. The breed requirements and characteristics are emphasized. Four hours judging. Two hours preparation. Two hours credit. First and second semesters. Pier, Jenkins

4. **Live Stock Feeding**—A study of feeds and their compounding into rations for the various classes of farm animals. Two hours attendance. Four hours preparation. Two hours credit. First and second semesters. Pier, Jenkins

5. **Animal Nutrition**—Methods employed in conducting experimental feeding. A study of experiment station bulletins. Preparation of coarse fodders. Grinding, steaming and cooking of feeding stuffs. Prerequisite: Course 4 and Chemistry 1; Chemistry 2 required or can be taken at the same time. Two hours attendance. Four hours preparation. Two hours credit. First semester. Gramlich, Jenkins

6. **Animal Nutrition**—General composition of the animal body. Digestion, absorption, metabolism and secretion. Influence of food on animal form and on quality of meat and milk. Prerequisite: Course 5 and Chemistry 103. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Jenkins

7. **Animal Breeding**—Embraces general principles of breeding, selection and heredity. Includes a historical study of old and modern theories. Prerequisite: Course 1 and Zoology 1, 2. Two hours attendance. Four hours preparation. Two hours credit. First semester. Pier

8. **Animal Breeding**—Discussion of recent experiments in animal breeding. Practical points in breeding. Study of line breeding and in-breeding. Attention given to important breeding laws. Study of herd book regulations. Prerequisite: Course 7. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Pier

9. **Judging Live Stock**—Advanced course in judging with special attention given to the study of breed type. Prerequisite: Courses 1 and 2. Two hours attendance. One hour preparation. One hour credit. First semester. Pier

10. **Judging Live Stock**—Continuation of 9. Prerequisite: Course 9. Two hours attendance. One hour preparation. One hour credit. Second semester. Pier

10a. **Advanced Live Stock Judging**—This course is given more especially for juniors who have had courses 1, 2, 9 and 10 and who con-

template taking course 11 in their senior year. Two hours attendance. One hour credit. Second semester. Gramlich

11. **Judging Live Stock**—Continuation of 9 and 10, with especial attention given to comparison and judging of animals of different ages and also to group judging. Prerequisite: Course 10. Two hours attendance. One hour preparation. One or two hours credit. First semester. Gramlich

12. **Animal Husbandry—Seminar**—Prerequisite:: Courses 4, 5, 6, 7, 8. Two hours attendance. Two to ten hours preparation. One to five hours credit. Second semester. Gramlich, Pier

13. **Live Stock Management**—Care and management of hogs and sheep. Prerequisite: Course 4, unless otherwise arranged. Two hours attendance. Two hours laboratory. Four hours preparation. Three hours credit. First semester. Gramlich

14. **Live Stock Management**—Continuation of 13. Care and management of the breeding herd of beef cattle and horses. Prerequisite: Course 4, unless otherwise arranged. Four hours preparation. Two hours attendance. Two hours laboratory. Three hours credit. Second semester. Gramlich

15. **Pedigrees**—A study of the registration of pure bred animals. Historical study of the various breed associations together with familiarization with their rules and methods. Practice in the tracing of pedigrees. Prerequisite: Courses 1 and 2. Two hours attendance. Four hours preparation. Two hours credit. Second semester. Gramlich

16. **Laboratory Practice**—Practice in teaching Animal Husbandry subjects in secondary school work. Registration only by arrangement with instructor. Two hours credit. Second semester. Gramlich

### Poultry Husbandry

Professor Mussehl

1. **Poultry Management**—This course deals with the problems of general poultry production. A textbook is used, supplemented with lectures, demonstrations and two hours of laboratory work each week. Poultry breeds and types, house construction, practical poultry feeding, incubation and brooding and preparation of market poultry and eggs, are treated in this general course. Two hours lecture. Two hours laboratory. Two hours credit. Second semester. Mussehl

2. **Poultry Judging and Breeding**—Breeds and types of standard bred poultry are judged by score card and comparison. The art and science of poultry breeding is discussed in the lectures. Inheritance of egg production, comb, color and types are covered in particular. One hour lecture. Two hours laboratory. Two hours credit. First semester. Mussehl

3. **Incubation and Brooding**—Each student does practical work in operating an incubator and brooder and feeding baby chicks, keeping records and making observations. Time to be arranged. One, two or three hours credit. Second semester. Mussehl

4. **Market Poultry and Market Eggs**—This course deals with the handling of the two most important poultry products, meats and eggs. Practice and demonstrations in crate feeding poultry, dry picking, trussing and boning. Grading and candling market eggs. One hour lecture. Two hours laboratory. Two hours credit. First semester. Mussehl

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## ANIMAL PATHOLOGY AND HYGIENE

Professor Van Es *(Head of Department)*, Professor Gain

1. **Diseases of Farm Animals**—Contagious diseases are studied with reference to the best methods of preventing and eradicating tuberculosis, hog cholera and contagious abortion, and the intelligent cooperation with the veterinarian in this work. Students are taught how to splice ropes, make rope halters and all of the different knots used on the farm and ranch. Three hours attendance. Six hours preparation. Three hours credit. Second semester. Gain

## BOTANY

(See College of Arts and Sciences.)

## CHEMISTRY

Professor Upson *(Head of Department)*, Professor Plum, Associate Professor Eastlack, Assistant Professor Calvin, Instructor Anderson, Instructor Vose, Assistant Ingersoll

1. **General Inorganic Chemistry**—The non-metals and their compounds. Three hours lecture and recitation. Six hours laboratory. Six hours preparation. Five hours credit. First semester. Plum

2. **General Inorganic Chemistry**—Course 1 continued. Three hours lecture. Six hours laboratory. Six hours preparation. Five hours credit. Second semester. Plum

3. **General Inorganic Chemistry**—Prerequisite two points entrance credit in chemistry. Two hours lecture. Four hours laboratory. Three hours credit. First semester. Plum

4. **General Inorganic Chemistry**—Course 3 continued. Two hours lecture. Four hours laboratory. Three hours preparation. Three hours credit. Second semester. Plum

Note—The aim of the courses in general chemistry is to present the more important facts concerning the non-metallic elements and the metals and their compounds. The fundamental principles of chemistry are emphasized and the important theories, such as chemical equilibrium and the modern theories of solution, are freely used. The courses are designed to meet the needs of those who wish to study the science as part of a liberal education and also to serve as a foundation for those who wish to go deeper into chemistry. Separate credit is given for each course but students are advised to take at least one year of the subject. Either courses 1 and 2, or 3 and 4 are prerequisite to all other courses in the department.

123. **Agricultural and Soil Analysis**—Laboratory work on the analysis of feeding stuffs, dairy products and soils. Prerequisite: Course 22. Given at the College of Agriculture. Nine to fifteen hours laboratory. Three to five hours credit. Second semester. Calvin

31. **Elementary Organic Chemistry**—Lectures, recitations and laboratory work on the compounds of the aliphatic and aromatic series. For students not specializing in chemistry. Prerequisite: Course 2 or 4. Three hours lecture. Six hours laboratory. Six hours preparation. Five hours credit. First semester. Upson

46. **Biochemistry**—The chemistry of carbohydrates, fats, proteins, colloids and inorganic food materials. The chemistry of enzyme action, the chemistry of digestion, metabolism and excretion and the chemistry of nutrition are considered. This course presents the principles of physiological chemistry as a foundation for work in the biological sciences. Three hours lecture. Six hours laboratory. Five hours credit. Prerequisite: Course 31. Second semester.

## DAIRY HUSBANDRY

Professor Frandsen *(Head of Department)*, Assistant Professor Nevins, Assistant Professor Thorson, Assistant Professor Luithly, Assistant Professor Rovner, Mr. Thompson

1. **Principles of Dairying**—The object of this course is to give such fundamental training in dairying as will be of practical value to the student and at the same time prepare him for more thoro work in the dairy courses which follow. This course deals with the characteristics and composition of milk, factors influencing the amount and composition of milk, physiology of milk secretion, breeds of dairy cattle, testing of milk and cream by the Babcock method, cream separation, cream ripening, principles of buttermaking and dairy sanitation. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First semester. Frandsen, Thorson, Nevens.

2. **Principles of Dairying**—Course 1 continued. Second semester.

3. **Milk Production**—This course covers the field of Dairy Husbandry in its relation to the producer. It consists of two lectures a week and one laboratory period devoted to judging of dairy cattle. Lectures cover matter relating to the leading breeds of dairy cattle, their characteristics and adaptation for dairy purposes; the selection, breeding and building up of the dairy herd; selection of the dairy sire; calf raising; proper care of dairy cattle; the dairy barn; use of silo, a thoro study of the composition and relative food value of the leading dairy feeds and the feeding of dairy animals with special reference to economical milk production. Instruction in judging dairy cattle will consist of a study of the type and characteristics of the various dairy breeds. Prerequisite: Courses 1 and 2. Course 5 should be taken in connection. Two hours attendance. Four hours preparation. Three hours laboratory. Three hours credit. First semester. Nevens, Thompson

4. **Butter Making**—This course includes a general study of the composition of dairy products, separation and acidity of milk, the preparation of starters, ripening of cream, churning, and the packing of butter. Prerequisite: Courses 1 and 2. Two hours attendance. Four hours preparation. Three hours laboratoy. Three hours credit. Second semester. Frandsen, Thorson

5. **Dairy Judging**—The object of this course is to enable the student to fix in his mind the types of cattle that are profitable producers of dairy products. The greater part of the work is done by comparative judging, using the Ayrshires, Guernseys, Holsteins and Jerseys of the College herd and those of nearby herds. Prerequisite: Courses 1 and 2. Should be taken in connection with course 3. Three hours laboratory. One hour credit. First semester.
Nevens, Thompson

6. **Advanced Dairy Judging**—5 continued. Prerequisite: Course 5. One hour preparation and two hours laboratory. One hour credit. Second semester. Frandsen

7. **Milk Testing and Inspection**—This course consists of a study of the Babcock test for fat in milk and cream. It includes work with the various tests for moisture in butter, also a careful study of the methods for detecting preservatives and adulterations in dairy products, as well as the best methods of taking samples and of testing individual cows. This course also includes a careful study of the requirements necessary for the production of sanitary and certified milk. Prerequisite: Courses 1 and 2. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First semester.
Frandsen

8. **Ice Cream and Ices**—Elective in the Agricultural and Home Economics courses. This course consists of a study of the manufacture of ice cream and ices. Prerequisite: Courses 1 and 2 or course 12 or

by special arrangement. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. Second semester.
Frandsen, Thorson

9. **Official Testing**—The object of this course is to prepare men for positions as official testers of dairy cattle for advanced registration. The course includes a study of the rules and methods of conducting the tests; preparing of reports; individual breed requirements; and the benefits to the dairymen to be derived from official records. A portion of the time will be devoted to the study of cow testing associations. The laboratory work consists of actual practice in official testing. Prerequisite: Courses 1, 2 and 3. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First semester.
Frandsen, Lawritson

10. **Cheese Making**—A study of the importance of the quality and composition of milk in the manufacture of Cheddar cheese; the principles involved in cutting, heating, milling, maturing, salting and pressing the curd, curing and marketing; influence of organized and unorganized ferments in cheese; the construction and ventilation of cheese curing rooms. This course also includes lectures and laboratory work in the manufacture and marketing of brick, cream and cottage cheese. Prerequisite: Courses 1, 2 and 7. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. Second semester. Thorson

12. **Domestic Dairying**—This course is especially arranged for students of the Home Economics course. The object is to give the student some practical as well as scientific knowledge concerning the care and preparation of dairy products for food purposes. The course includes lectures and laboratory work on the care of milk and cream; testing for fat, acidity, adulteration, preservatives and the general purity of milk and cream. Some work is also given in the manufacture of butter, cheese and ice creams. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. Second semester. Frandsen, Thorson

13. **Dairy Bacteriology**—In this course the student studies the fundamental principles upon which is based the sanitary production and handling of milk, the relation of bacteria to the dairy industry in general, market milk, certified milk, sanitary milk, pasteurized milk, milk borne diseases, sources of contamination, normal and abnormal fermentations and their control. The course will deal with the bacteria more common to dairy products entirely from a practical standpoint. Prerequisite: Courses 1, 2, 7 and elementary bacteriology. One hour attendance. Two hours preparation. Six hours laboratory. Three hours credit. First semester. Frandsen

16. **Market Milk**—This course includes a study of the production, handling and marketing of clean milk and cream for public consumption; dairy sanitation; sources of milk contamination; sanitary planning and equipment of dairy buildings and milk bottling plants; transportation of milk; city ordinances; state and federal laws; condensed milk; modified and fermented milks; scoring milk and cream; city milk inspection. Prerequisite: Courses 3, 7, 13. One hour attendance. Three hours preparation. Three hours laboratory. Two hours credit. Second semester. Thorson

17. **Normal Training**—A general course designed especially to meet the needs of those interested in teaching agriculture in the secondary schools. The course deals with methods of instruction in teaching the breeds of dairy cattle, testing of milk and cream, principles of butter making, cheese making, ice cream making, sanitary conditions of barns and dairies. One hour attendance. Two hours preparation. Three hours laboratory. Two hours credit. First semester.
Frandsen, Nevens, Thompson

FOR UNDERGRADUATES AND GRADUATES

51. **Dairy Seminar**—Elective for students specializing in dairying. This course consists of a study of the work accomplished by the various experiment stations, also a review of the best foreign dairy literature. One hour attendance. Two hours preparation. One hour credit. First semester. Frandsen

52. **Dairy Seminar**—Course 51 continued. Second semester.

53. **Thesis**—Original work and investigation on some phase of the dairy industry. Frequent conferences with instructors. Prerequisite: Senior standing. Two to four hours preparation. One or two hours credit. First or second semester. Frandsen, Nevens

FOR GRADUATES

101. **Research Methods**—A critical study of the methods employed in conducting dairy experimental work at this and other stations. One hour attendance. One hour credit. First semester.
Frandsen, Nevens

102. **Research Methods**—Course 101 continued. Second semester.

103. **Research in Milk Production**—A large herd of cattle of the leading dairy breeds is available for use in studying problems of feeding, breeding, milk production, growth, and care and management of the dairy animal. This herd produces sanitary milk for the city trade and special opportunities are offered for a critical study of sanitary and certified milk production. Students especially interested are allowed to assist with the investigations now under way at the Experiment Station and in certain instances may undertake special problems independently. Thesis required. First semester. Frandsen, Nevens

104. **Research in Milk Production**—Course 103 continued. Second semester.

105. **Research in Dairy Manufactures**—Opportunity and facilities are given by special arrangement to study and investigate special problems in butter making, ice cream making, cheese making and other work directly pertaining to dairy manufactures. First semester.

Frandsen, Thorson

106. **Research in Dairy Manufactures**—Course 105 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## ENTOMOLOGY

Professor Bruner *(Head of Department)*, Professor Swenk, Assistant Professor Dawson

### GENERAL INFORMATION

The department maintains a laboratory fully equipped for the use of students engaged in research work along systematic lines, and a modern insectary well provided with apparatus useful in facilitating research in economic entomology, such as breeding cages, cameras, dark room and aquaria, for those investigating the life-histories of insects. The research laboratory is supplied with compound and dissecting microscopes, microscopical accessories, camera lucida, lanterns and slides and illustrative models and charts. A collection of insects numbering approximately 270,000 pinned specimens is available for study by advanced students; it is particularly rich in Hymenoptera, Diptera and Orthoptera and contains many specimens of these orders named by specialists including a considerable number of their types. While the greater portion of the collection is representative of our state and national fauna, it is also exceedingly rich in exotic material from Argentina, Costa Rica, Mexico and the Philippine Islands collected by Professor Bruner on entomological excursions to these countries. The library contains practically complete files of all the American and the principal foreign entomological periodicals as well as most of the special monographs in the various orders, and is readily accessible to advanced students, while the excellent economic libraries of the State Entomologist and Nebraska Experiment Station are close at hand and available for reference. The results of studies carried on in the department are issued consecutively in a numbered series.

Courses 3 and 4 are open to all students, and they, or their equivalent, must precede all other college courses in entomology except 7, 7a, 8, 9, 10 and 11.

FOR UNDERGRADUATES

3. **Economic Entomology**—An introduction to the more practical phases of entomology, beginning with a consideration of the structure, physiology and metamorphosis of insects and a review of the insect orders, and following this with a presentation of the broad principles of insect damage and benefit, and the natural and artificial control of insects. Laboratory work involving the dissections of typical forms of the various orders and the rearing of insects, together with assigned readings correlated with the lectures. Three hours attendance. Six hours laboratory and preparation. Three hours credit. First semester. Bruner

4. **Economic Entomology**—Course 3 continued. In addition, studies of various groups of conspicuously injurious insects, emphasizing their life-histories and habits and the special preventives and remedies for them. Assigned readings correlated with the lectures, and in the spring observations of the work of injurious insects in the field. Three hours attendance. Six hours laboratory and preparation. Three hours credit. Second semester. Bruner

PRIMARILY FOR UNDERGRADUATES

5. **Systematic Entomology**—A close study of the principles and machinery of classification as applied to insects, involving a consideration of current taxonomic methods in entomology, of nomenclatural codes and of faunal areas, designed especially to acquaint the student with the literature of entomology and the approved methods of preparing data for publication as a foundation for research work in systematic entomology. Laboratory work with the various insect groups, designed to give a conception of the varying value of classificatory characters. Two hours attendance. Seven hours laboratory. Three hours credit. First semester. Swenk

6. **Systematic Entomology**—Course 5 continued. In addition, a detailed study of entomological technique, involving methods of collecting, preparing and preserving insects for the cabinet and museum and the use of apparatus necessary in entomological work. Two hours attendance. Seven hours laboratory. Three hours credit. Swenk

7. **Farm Entomology**—A detailed consideration of the principal insect enemies of the apple, stone fruits, grape, bush fruits, strawberry and garden vegetables and of the preparation and use of insecticides and methods of spraying and fumigation. Assigned readings correlated with the lectures, and, wherever possible, field work in investigating insect pests. Two hours attendance. Four or seven hours preparation. Two or three hours credit. First semester. Swenk

7a. **Live Stock Entomology**—A course taking up in detail the injuries, life-histories and habits, and modern means of prevention and

destruction of the mites, ticks, lice, fleas, stable-flies, horn-flies, horse-flies, bot-flies and similar important insect pests of our domestic animals. This course is correlated with course 7 and is usually to be taken with it, but may be elected separately if desired, especially by students majoring in Animal or Dairy Husbandry. One hour attendance. Two hours preparation. One hour credit. First semester. Swenk

8. **Farm Entomology**—Course 7 continued. A similar detailed study of the principal insects injurious to corn, the small grains, alfalfa and clover, grasses, the potato and the sugar beet, and to stored vegetables and animal products, designed to give the student a thoro understanding of the means of control of all of the important pests of our cereal, forage and other field crops, and a fund of practical information on the control of injurious insects in general. Three hours attendance. Six hours preparation. Three hours credit. Second semester.
Swenk

9. **Apiculture**—A general survey of the subject including a discussion of the structure, life-history, varieties and communal life of the honey bee; methods of handling bees, formation of colonies, controlling the colony growth, rearing of queens, honey and wax production, apiary paraphernalia and the symptoms, etiology and control of bee diseases and other enemies of bees. One hour attendance. Two hours directed reading. One hour credit. First and second semesters.
Bruner, Swenk

10. **Domestic Entomology**—A brief general survey of insect life, emphasizing especially the insects affecting the household, such as silver fish, cockroaches, termites, house flies, mosquitoes, fleas, house ants, clothes moths, flour and meal pests, etc., with thoro discussions of means of control. Two hours attendance. Four hours directed reading. Two hours credit. First semester. Swenk

11. **Forest Entomology**—Lectures and laboratory studies of the insects of the forest. Two hours attendance. Seven hours laboratory and preparation. Three hours credit. Second semester. Bruner

14. **Seminary**—The seminary work of the department is carried on by the Nebraska Entomological Society, an association of students specializing in entomology and taking advanced or graduate courses, meeting at intervals for the presentation of papers and the discussion of current entomological literature.

PRIMARILY FOR GRADUATES

(These courses may be registered for repeatedly until the completion of the problem.)

15. **Research in Systematic Entomology**—Independent studies under the advice of the head of the department leading to the monograph-

ing of some genus, subfamily or family of insects or the detailed study of the insect fauna of Nebraska in one of the larger groups. First semester. Bruner

16. **Research in Systematic Entomology**—Course 15 continued. Second semester.

17. **Research in Economic Entomology**—Individual investigation of some special problem in economic entomology, usually the monographing of a species or group of species of economic importance. First semester. Bruner

18. **Research in Economic Entomology**—Coures 17 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## FARM MANAGEMENT

Professor Filley *(Head of Department)*, Assistant Professor Spafford, Assistant Professor Medlar, Mr. Hendricks, Mr. Rhoades

Farm Management is the business side of farming. It deals with the problems which confront every farmer in the organization and management of his farm. The farm is considered as a business investment from which the owner and operator wish to secure the greatest continuous profit.

All the courses offered except courses 1 and 2 presuppose not only general agricultural knowledge but also some technical training. For this reason they are better adapted to advanced students than to first or second year men.

Students wishing to major in the department should register for course 1 at the beginning of the sophomore year. If only a year's work can be taken in Farm Management, course 3 followed by either 2 or 12 is recommended. The seminar and field survey courses offer unusually good opportunities for a limited amount of graduate work.

### FOR UNDERGRADUATES AND GRADUATES

1. **Farm Documents**—This course deals with the legal phase of the farm business. Contracts, leases, deeds, mortgages, abstracts, negotiable instruments and other legal papers of which the farmer should have a working knowledge are discussed. Some time is given to those parts of the Nebraska law, such as the provisions regarding live stock and labor, which bear most directly upon farm management problems. Open to all but freshmen. Two hours attendance. Four hours preparation. Two hours credit. First semester. Rhoades

2. **Farm Accounts**—A practical system of cost accounts for the farmer. Each student keeps a set of books which shows the cost of

the various farm operations for the year, and the gain or loss upon each farm enterprise. Open to all but freshmen. Two hours lecture. Two hours laboratory. Two hours outside preparation. Two hours credit. Second semester. Rhoades

3. **Farm Organization**—Types of farming and their adaptation to different regions, size of the farm unit, capital, labor, systems of land tenure, maintenance of soil fertility, cropping systems, the farmstead, field arrangements, choice and purchase of a farm, and other factors of farm organization which affect farm profits are studied. Work based on text books, bulletins and Nebraska farm management survey records. Open to juniors, seniors, graduates, to second year men in the agricultural practice group and to others by permission. Graduates of the School of Agriculture who have credit for Farm Management A may register for the course for two hours credit. Three hours attendance. Two hours laboratory. Four hours outside preparation. Three hours credit. First semester. Spafford, Medlar

4. **Farm Management Seminar**—Prerequisite: Course 3. A continuation of course 3, dealing with specific problems in Farm Management. Each student investigates and reports upon some particular problem. Three to fifteen hours meeting, preparation and library. One to five hours credit. Second semester.
Filley, Spafford, Rhoades, Medlar

11. **Marketing of Farm Products**—This course deals with such problems as producers and consumers prices, wholesale and retail marketing, competition and cooperation. The marketing of cereal crops is studied in detail, the grain being traced from producer to consumer. This includes the study of the farmers' elevator movement, railway rates, grain exchanges, grain warehouses, and other factors affecting prices. Open to juniors, seniors, graduates, second year men in the Agricultural Practice Group and others by permission. Two hours attendance. Four hours preparation. Two hours credit. First semester. Filley

12. **Marketing of Farm Products**—Course 11 continued. The marketing of live stock and live stock products is studied in detail. Different types of animals are traced from the farm to the consumers' table. The latter part of the semester is devoted to a study of the retail store. Two hours credit. Second semester. Filley

PRIMARILY FOR GRADUATES

7. **Farm Management Survey**—Prerequisite: Courses 3 and 4. Field work, tabulation, and analysis of data. It is designed to train students for field work and to give them a first hand knowledge of Nebraska farm conditions. Field work may be done during vacation.

Admission by consent of the instructor. Three to fifteen hours meeting, field work, tabulation of data and library. One to five hours credit. First semester. Filley

8. **Farm Management Survey**—Course 7 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## GEOGRAPHY AND CONSERVATION

### State Conservation and Soil Survey

Professor Condra *(Head of Department)*, Professor Bengtson, Professor Brownell, Professor Loveland, Miss Nelson
Miss Anderson, Mr. Wolfanger

Courses 1, 2, 4, 5 and 6 are open to all students. Field courses are planned separately for men and women. Courses 1, 5, 21 and 22 are well adapted to the needs of Engineering students. Persons preparing to teach Geography should consult with the head of the department concerning the choice and sequence of courses. The courses required for majors and minors will vary with the individual needs of the student.

Thru coöperation with other departments this department offers preparation for work in Soil Survey and in Real Estate. The needed courses may be grouped to correlate wth the general requrements of the Colleges of Agriculture and Arts and Sciences so as to afford specialization along the above named lines during the sophomore, junior and senior years. Students wishing to take advantage of this training should elect their major in the department of Geography and Conservation and on first consultation with the departmental adviser should indicate which one of the vocational lines he intends to follow. Graduate instruction leading to the second and third degrees is offered. Theses are based on original work done in the laboratory and in the field.

1. **General Geography**—An introductory study of geographic influences in human life. Emphasis is given material resources and land forms in their relation to industry—the physical geography of the land. The course offers the basis for the geographic interpretation of history, and includes the geographic material essential in the general science studies. Lectures fully illustrated by lantern slides, maps, models, and specimens. Two hours attendance. Four hours library and laboratory preparation. Two hours credit. Open to all. First semester.
Bengtson and Assistants

2. **North America**—A summary study of the political divisions, relief, drainage, coast lines and climate of the continent. Full treatment is given each of the topographic regions, including their structure, topography, physiographic development, resources and industries. The Great Plains Region is emphasied. The course is suited to all students who wish a knowledge of the geography of our country. "Know America Better" is the keynote of the course. Lectures illustrated. Two hours attendance. Four hours library, laboratory and preparation. Two hours credit. Second semester.

Bengtson

4. **The Atmosphere**—(Meteorology). The course is designed to meet the needs of students in geography and agriculture. Some of the topics considered are the composition of the atmosphere; distribution of heat and atmospheric pressure; wind systems; humidity and rainfall; storms; hot winds; changes and fluctuations of climate; climatology in its relation to deserts, prairie land, forests, agriculture and the distribution of people; the construction of weather maps and climatic charts; forecasting, and the use and care of meteorological instruments. Two hours atendance. Four hours preparation. Two hours credit. First and second semesters. Loveland

5. **Industrial Geography**—This course covers the mineral fuels, iron, forest and water resources and their development. Studies are made of the following: Coke, coal, petroleum, iron and steel, lumber, turpentine, pulpwood, rubber and water power. Lectures fully illustrated by slides, motion pictures, charts and specimens. Two hours attendance. Four hours library and preparation. Two or three hours credit. Open to all. First semester. Condra, Bengtson

6. **Agricultural Industries**—Practical studies are made of the following industries: Cotton, corn, wheat, beet sugar, cane sugar, apple, poultry, cattle and sheep. The processes involved in converting raw materials into the finished articles of commerce are emphasized. The forms, processes and commercial relations are illustrated by means of specimens and well selected sets of lantern slides and motion pictures. This is a course in practical agricultural industry. Two hours attendance. Four hours library, museum and preparation. Two or three hours credit. Second semester. Condra, Bengtson

12. **Laboratory Course in Regional Geography**—Intensive study of selected regions of the United States designed to furnish students the preparation necessary for accurate independent work. Two hours credit. Second semester. Bengtson

17. **Seminar**—Primarily for graduate students. Special research problems. Credit determined by results and time. First semester.

**Department Staff**

18. **Seminar**—Course 17 continued. Second semester.

### Field and Survey Courses

9. **Field Work**—For women. Excursions to points of geographic interest near Lincoln, Milford, Pleasant Dale, Roca, South Bend and Louisville. A study of rivers, flood plains, terraces, drift deposits, rock ledges, escarpments, talus slopes, valleys, quarries and sand dredging. A valuable course for all, especially for prospective teachers. Credit depending on time and results, one or two hours. First and second semesters. Nelson, Mrs. Condra

10. **Field Work**—Course 9 continued. Second semester.

21. **Field Work**—Open to all men students. Excursions are made to valleys of Salt Creek, Blue River and the Platte to study the various surface features, such as loess plains, drift hills, alluvial terraces, fans, flood plains, rock benches, talus slopes, spurs and ridges, sand dredging, gravel pits, clay pits, and quarries. Use of the level, camera and drawing materials as employed in surveys. Interpretation of topography and origin of different series of soil emphasized. Field trips on certain Saturdays. One or two hours credit. First and second semesters. Bengtson, Wolfanger

22. **Land Mapping**—Course 21 continued. Plane table work added. First and second semesters.

23. **Soil Survey**—A field course in practical soil classification, description and mapping. The methods used in state and national surveys exemplified. Designed for Agriculture, Engineering and special students preparing for work on State or Federal soil surveys. Autos are used for field reconnoissance. Open to advanced students registered by permission. Two hours credit. First and second semesters. Condra, Bengtson

24. **Soil Survey**—Course 23 continued.

28. **Agricultural Geography of Nebraska**—The physiography and industries of the state are the central themes of the course. Topographic and soil regions are carefully studied, especially with respect to their geography and agricultural relations. Lectures are given by men representing different phases of the state development and survey activities. Designed for those who wish to know Nebraska better. Lectures illustrated by slides, specimens and motion pictures. Some field trips are made to places of physiographic and industrial interest. Two hours attendance. Two hours credit. Second semester. Bengtson

52. **Agricultural Geography**—A fundamental course in the study of land and climate. Some of the topics treated are: Materials of the land; rock weathering; erosion by streams, glaciers, ground water, and wind; origin and description of land forms; weather and climate. Field trips are made to interpret and describe land forms. Laboratory

work includes study of soil forming minerals and rocks, construction and interpretation of maps, uses of weather maps, climatic charts and meteorological instruments. Lectures illustrated. Three hours attendance. Six hours laboratory and preparation. Three hours credit. Second semester at farm campus. Bengtson, Loveland

## HOME ECONOMICS

Professor Loomis *(Head of Department)*, Associate Professor Vance, Assistant Professor Cranor, Assistant Professor Fedde, Miss Canfield, Miss Curtiss, Miss Bowen, Miss Ahrens, Miss Lacey

### GENERAL INFORMATION

The courses in this department are planned to meet the needs of three classes of students:

(1) Those students who are specializing in other lines of study and desire some knowledge of home economics as part of a general education.

(2) Those students who desire a special study of home economics together with the arts and sciences necessary for the successful management of homes.

(3) Those students who wish to teach home economics or to enter allied professions.

Courses are required in related subjects, hygiene, sociology, fine arts and the sciences. Approximately one-fourth of the work is given in the Home Economics department, one-fourth is in science and one-fourth in language and history. In the Junior and Senior years a part of the work is elective.

The lectures are given on the city campus or preceding laboratory periods in Home Economics Hall. This building contains eight well equipped laboratories, a practice dining room and kitchen and a cafeteria. The Hall offers an excellent opportunity for practice work in household administration problems.

The following courses are required for a major in Home Economics in the Agricultural College: 1[1], 2, 3[2], 4, 6[3], 7, 8, 9, 10.

For a major in Home Economics in the Agricultural and Teachers Colleges: 1[1], 2, 3[2], 4, 6[3], 7, 8, 9, 10, 13, 14.

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[1]Courses 1, 2 must be preceded or accompanied by Fine Arts 15 and 16.

[2]Courses 3, 4, (Elementary Food Study), must be preceded or accompanied by Chemistry 1 and 2.

[3]Course 6, (Dietetics), whether taken in a minor in other colleges or in a major in the Agricultural College must be preceded or accompanied by Chemistry 31, (Organic), and 46, (Biochemistry), or their equivalent and Physiology 1 and 2.

For a minor in Clothing Study in the College of Arts and Sciences: 1[1], 2, 3[2], 4, 7, 8.

For a minor in Clothing Study in the Arts and Sciences and Teachers Colleges: 1[1], 2, 3[2], 4, 7, 8, 13.

For a minor in Food Study in the College of Arts and Sciences: 1[1], 2, 3[2], 4, 6[3].

For a minor in Food Study in the Arts and Sciences and Teachers Colleges: 1[1], 2, 3[2], 4, 6[3], 13, 14.

1. Plain Sewing—The use and care of sewing machines and their attachments; hand and machine sewing as applied to undergarments; garment drafting, simple embroidery, knitting, crotcheting, darning and patching. Students provide materials subject to the approval of instructor.

Textiles. A survey of the textile industry, beginning with the primitive through to modern methods of carding, spinning and weaving; cotton, wool, silk, linen, and other textile fibers studied with reference to growth, manufacture, finish, name, quality, price, width, properties of fiber, variation of weave, use and value. Household, chemical and miscroscopic texts of materials for fibers and adulterations, in relation to dyeing, cleaning and laundering, with special emphasis upon the economic side of textiles. Two hours attendance. Four hours laboratory. Three hours outside preparation. Three hours credit. First semester. Cranor, Curtiss, Ahrens

2. Elementary Dressmaking—The making of a simple one piece dress, a tailored skirt and shirt waist or shirt; the use and alteration of commercial patterns. Students provide material subject to th approval of the instructor.

Drafting, Cutting and Fitting. The drafting, cutting and fitting of skirts, a tight waist, shirt waist, kimono waist, coat, sleeves, princess slip, and the padding of a form. Prerequisites: Textiles and Clothing I. One hour attendance. Five hours laboratory. Three hours credit. Second semester. Cranor, Curtiss, Ahrens

3. Elementary Food Study—Composition and function of typical foods; fundamental principles and processes of cooking and their application in the preparation of foods; nutritive and economic values; food preservation. Should be preceded or accompanied by Chemistry

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[1]Courses 1, 2 must be preceded or accompanied by Fine Arts 15 and 16.

[2]Courses 3. 4. (Elementary Food Study), must be preceded or accompanied by Chemistry 1 and 2.

[3]Course 6, (Dietetics), whether taken in a minor in other colleges or in a major in the Agricultural College must be preceded or accompanied by Chemistry 31. (Organic), and 46, (Biochemistry), or their equivalent and Physiology 1 and 2.

1 and 2. Two hours attendance. Six hours laboratory. Four hours outside preparation. Four hours credit. First semester.

Fedde, Lacey

4. **Elementary Food Study**—Course 3 continued. Second semester.

5a. **Elementary Food Study**—This course is intended for students who have six hours entrance credits in food study. The quality of the work must have been satisfactory to the Department of Home Economics in the University. This course will, in addition to the entrance credits, be equivalent to Home Economics 3 and 4. It should be preceded or accompanied by Chemistry 1 and 2. One hour attendance. Three hours laboratory. Outside preparation. Two hours credit. First semester. Vance

6. **Dietetics**—A study of the chemical, physical and economic factors involved in the problems of human nutrition. To be offered for graduate as well as undergraduate work. Prerequisites: General, organic and food Chemistry, Physiology, Home Economics 3 and 4. Two hours attendance. Six hours laboratory. Four hours credit. Second semester. Loomis, Vance, Fedde

7. **Dressmaking**—A wool dress, a net guimpe and a conservation problem. Drafted and commercial patterns. Students provide material subject to the approval of the instructor. Prerequisites: Textiles and Clothing 1 and 2. Two hours attendance. Four hours laboratory. Three hours outside preparation. Three hours credit. First semester.

Cranor, Curtiss, Bowen

8. **Dressmaking**—Dark silk dress or silk suit and an afternoon or evening dress. Practice in draping and working on the form. Designs as well as all patterns used worked out on form. Original work required. Modern garments designed from ancient, national and fancy costumes. Prerequisites: Textiles and Clothing 1, 2 and 7. Two hours attendance. Four hours laboratory. Three hours outside preparation. Three hours credit. Second semester. Cranor, Curtiss, Bowen

9. **Household Administration**—House plans and furnishings; ventilation, heating, lighting, water supply, disposal of waste; management of household affairs, division of income, domestic service, and care of the house. Must be taken in connection with Agricultural Engineering 17. Two hours attendance. Three hours laboratory. Four hours outside preparation. Three hours credit. First semester.

Loomis, Canfield, Cranor

10. **Household Administration**—Course 9 continued. Second semester.

11. **Survey Course in Food Study**—For students in the College of Arts and Sciences who desire a general knowledge of foods, their composition, preparation and place in the dietary. Open only to stu-

ents above the freshman year. Not required in the four-year Home Economics Group. One hour attendance. Three hours laboratory. Two hours credit. First semester. Vance, Lacey

12. **Survey Course in Food Study**—Course 11 continued. Includes the preparation and service of simple dietaries for adults and children in health and disease.

13. **Teachers' Course**—Theory and method of teaching Home Economics. Required of candidates for the University Teachers' Certificate in Home Economics. Lectures with practice teaching. Two hours attendance. Four hours outside preparation, including practice teaching. Two hours credit. First semester. Loomis, Linch, Cranor

14. **Teachers' Course**—13 continued. Second semester.

15. **History of Costume**—(Elective). The course includes a survey of Egyptian, Grecian and French Costume. The aim of the course is to give a knowledge and appreciation of ancient costume and to make a practical application of its artistic features to present day dress. Prerequisites: Courses 1 and 2. Two hours attendance. Four hours outside preparation. Two hours credit. First semester. Cranor

16. **A Survey Course in Clothing.**—(Elective.) This course is designed to cultivate an appreciation of what is good in dress, from the standpoint of art, construction, economics and ethics by making a practical application of the knowledge acquired from the study of various phases of Textiles and Clothing. Open to Juniors, Seniors and Adult Specials. Two hours attendance. Four hours outside preparation. Two hours credit. Second semester. Cranor

18. **Millinery**—(Elective.) The student is given practice in the processes involved in the making and covering of hat frames with straw, silk, velvet, etc., the making and placing of bows, flowers, and other trimming. Students provide material subject to the approval of the instructor. One hour attendance. Two hours laboratory. Two hours outside preparation. One hour credit. Prerequisites: Courses 1 and 2. Second semester. Curtiss

20. **Home Economics Extension Teaching**—A discussion of the system of Extension Teaching in the United States, especially the organization and activities of the U. S. Department of Agriculture, in so far as it deals with extension teaching. A study of the organization, aims and methods of the Extension Service of the State College. A detailed study of Home Economics Extension Work, as carried on thru County Home Demonstration Agents and Home Economics specialists: methods employed in teaching women and girls, including the demonstration, lecture, and the use of the press; programs for study-groups; qualifications of workers. Two hours attendance. Outside

preparation arranged. Two hours credit. Second semester.

Mrs. Davisson

**Agricultural Engineering 33**—House Planning—A course in house design given by the department of Agricultural Engineering. Baer

PRIMARILY FOR GRADUATES

105. **Advanced Problems in Food Study**—Lectures, conferences, library, and laboratory work on problems in the preservation and preparation of food. Prerequisite: Bacteriology 2a, Chemistry, Home Economics 3 and 4. Three to four hours credit.

106. **Dietetics**—Additional reference and conference work with individual problems in the study of actual dietaries and the planning of dietaries to meet the various needs. To be taken in connection with or following Home Economics 6. Graduate credit only. It is recommended that students registering for Home Economics 6 and 106 register also for Agricultural Botany 117 and 118, Comparative Physiology, and Agricultural Chemistry. Two to four hours credit.

117, 118. **Seminary on Home Economics Education**—A study of the development of Home Economics, with particular attention to the correlation of these with other subjects; the articulation of Home Economics work in the various grades of schools; the consideration of courses of study now in use; and the planning of courses that will meet the growing demand for vital, flexible, well balanced courses. Prerequisite: 24 hours undergraduate work in this department, educational courses sufficient to entitle student to State Certificate and successful teaching experience in Home Economics. Two hours credit.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## HORTICULTURE

Professor Howard *(Head of Department)*, Associate Professor Hood, Associate Professor Cooper, Assistant Professor ——, Assistants

The courses offered in this department are designed to give the student a thoro working knowledge of the principles and practice of the most important lines of horticultural work. The orchard, vineyard, gardens, forestry plats and arboretum are used to demonstrate the principles brought out in the class room.

A limited number of advanced students who desire to fit themselves for teachers and investigators will be employed at moderate compensation to assist in the laboratory of the School of Agriculture during the winter and also to help with the work at the Experiment Station during the summer.

Agricultural Botany 101 and 102, or Botany 1 and 2, should precede all courses in Horticulture. All courses are open to women, but courses 3, 4 and 20 are especially recommended.

PRIMARILY FOR UNDERGRADUATES

1. **Principles of Vegetable Growing**—This course includes the study of the principles of vegetable growing, a consideration of seeds and seeding, and the requirements for the successful manipulation of plants. Each vegetable crop will be discussed. Prerequisite: Botany 1 and 2. Two hours attendance. Two hours laboratory. Two hours preparation. Two hours credit. First semester. Hood

2. **Principles of Fruit Growing**—An introductory course designed to cover the principles of fruit growing, and their application to our common tree fruits. Two hours preparation. Two hours attendance. Two hours credit. Second semester. Howard, Cooper

3. **Vegetable Gardening and Ornamental Plants**—A study of seeding, vegetative propagation of plants, management of the home garden, school gardens, care of lawns, culture of potted plants and ornamental flowers suitable for window gardening and for outdoor home decoration. Courses 3 and 4 are designed to meet the needs of girls wishing a brief study of horticulture for the home as well as to give some appreciation for school garden work. Open to women only. Two hours attendance. Four hours preparation. Two hours credit. First semester. Hood

4. **Vegetable Gardening and Ornamental Plants**—Course 3 continued. Second semester.

5. **Spray Mixtures**—This course is designed to give a thoro practical knowledge of insecticides and fungicides and their manner of application for the control of insects and fungous diseases and the methods of repairing and correcting broken, diseased, deformed and insect infested trees. Juniors and seniors. Two hours attendance. Four hours preparation. Three hours laboratory. Three hours credit. Second semester. Cooper

11. **Adanced Vegetable Growing**—A detailed and systematic study of vegetable crops. This course is designed to meet the needs of those desiring to engage in commercial truck gardening. The laboratory work will be devoted to the study of systematic olericulture, or the study of the different varieties of vegetables. This enables the student to acquaint himself with the best varieties both in quality, production and commercial importance. Judging and scoring of vegetables will also be given attention. Prerequisite: Course 1 and Botany 1 and 2, or Plant Pathology and Physiology 101 and 102. Open to juniors and seniors. Two hours attendance. Three hours laboratory. Four hours preparation. Three hours credit. First semester. Hood

12. **Advanced Vegetable Growing**—Course 11 continued. Second semester.

13. **Farm Forestry**—The propagation of forest trees; nursery methods and practices; requirements of forest trees as to soil, moisture and climate; care of trees in farm wood-lots; the best species for Nebraska windbreaks and groves; preparation of planting plans; value of the timber crops; identification of common trees and shrubs; care and arrangement of street trees. Two hours attendance. Three hours laboratory. Four hours preparation. Three hours credit. First semester.

15. **Tree Fruits**—All phases of propagation, planting, culture, control of insects and fungous diseases, harvesting, storing and marketing tree fruits with reference to commercial orcharding will be given special attention. The laboratory exercises consist of field work along the lines covered by the lectures. Prerequisite: Course 2. Three hours attendance. Four hours laboratory. Five hours preparation. Four hours credit. First semester. Cooper

16. **Small Fruits**—All phases of preparation, planting, control of insects and fungous diseases, culture, harvesting, storing and marketing bush, cane and vine fruits with reference to commercial fruit growing are discussed. The laboratory work will consist in illustrating the lines covered by the lectures. Two hours attendance. Two hours laboratory. Five hours preparation including assigned readings. Three hours credit. Second semester. Cooper

17. **Apple Judging**—Identification and description of varieties of apples. Identification of insects, fungous and storage injury. Selecting specimens and preparing exhibits. Exercises in judging box, barrel and plate exhibits. Four hours laboratory. Two hours preparation. Two hours credit. First semester. Cooper

20. **Design of Home Grounds**—An elementary course designed for students not specializing in landscape gardening. Two hours lecture. One to two hours laboratory. Two hours library. Three hours credit. Second semester.

21. **Introduction into the Study of Landscape Gardening**—History of the development, principles, illustrated by slides. Occasional field trips. Two hours lecture. Two hours preparation. Two hours credit. First semester.

22. **Plant Materials**—A study of trees, shrubs, and perennials in their relation to landscape work. Two hours lecture. Two hours preparation. One to two hours laboratory. Three hours credit. Second semester.

FOR UNDERGRADUATES AND GRADUATES

7. **Horticultural Problems**—Assigned problems in Horticulture. Experimental work in the laboratory, gardens, greenhouses, or orchards, planning experiments, and keeping records. Hours for consultation. Two to five hours credit. Registration only by permission of Instructors. First semester. Howard, Hood, Cooper, ————

8. **Horticultural Problems**—Course 7 continued. Second semester.

10. **Genetic Seminar**—This course is given with a view of reviewing the experimental work in genetics. Prerequisite: Animal Husbandry 7 or Horticulture 25 or Zoology 32. One hour attendance. Two hours preparation. One hour credit. Second semester. Howard

19. **Systematic Pomology**—This course takes up in detail the systematic classification, nomenclature and discussion of tree, vine and bush fruits with the histories, origin and adaptability of each. The laboratory consists of the examination and classification of the various fruits. Prerequisite: Course 2. Two hours attendance. Four hours laboratory. Three hours preparation. Three hours credit. First semester. Cooper

23. **Landscape Design**—Topographical surveys and mapping with special reference of the methods used in landscape gardening; relation of topographic maps to landscape design; grading plans and working drawings, road and grade design. Design of school grounds, small parks, golf courses and the larger estates. Students should have preparation in systematic botany, plane surveying, mathematics, and free-hand drawing. Prerequisite: Courses 20, 21 and 22. Six hours laboratory. Three hours preparation. Three hours credit. First semester. ————

24. **Landscape Design**—Course 23 continued. Second semester.

25. **Principles of Plant Breeding**—An elementary study of the principles underlying plant improvement, a study of the methods involved in applying the principles of heredity to the improvement of horticultural plants. Practice in the technique of crossing. Prerequisite: Botany 1 and 2 or Plant Pathology and Physiology 101 and 102 or Zoology 11 and 12. Two hours attendance. Four hours preparation and library. Two hours credit. First semester. Howard

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## MILITARY SCIENCE AND TACTICS

(See College of Arts and Sciences)

## PHYSICAL EDUCATION

(See College of Arts and Sciences)

## PLANT PATHOLOGY AND PHYSIOLOGY

Professor Wilcox *(Head of Department)*, Associate Professor Link, Associate Professor Thurston, Assistant Professor Davis, and Assistant Professor Andersen

### GENERAL INFORMATION

The offices, laboratories and lecture rooms are located in Plant Industry Hall. For use in the instructional work the department has a very extensive collection of lantern slides, charts and other illustrative material. An extensive pathological herbarium and collection of economic plants are being developed as rapidly as possible. The large private library of the head of the department of Plant Pathology and Physiology, particularly complete in phytopathology, is available for the use of advanced students. A greenhouse has been arranged and specially equipped for experimental work in physiology and pathology.

A limited number of advanced students with proper training can be offered exceptional opportunities for research work in physiology and pathology. In some cases it is possible for such students to receive compensation for work done in connection with problems being investigated by the department.

### GRADUATE WORK

The department is especially prepared to offer graduate work in pathology, physiology and morphology. To successfully undertake research work in these subjects students should have a broad training in botany, chemistry and zoology; should be able to read French and German and should have taken at least six hours of work in this department. Before registering, students should consult the head of the department.

### COURSES PRIMARILY FOR UNDERGRADUATES

101. **Elementary Botany**—A general introduction to the science of botany from the standpoints of morphology, physiology and ecology. Three hours lecture. Two hours preparation. Four hours laboratory. Three hours credit. First semester. Wilcox, Davis, Andersen

102. **Elementary Botany**—Course 101 continued. Second semester

105. **Plant Physiology**—A course of selected experiments supplemented by lectures, conferences and readings designed to acquaint the student with the activities of plants. A study of the relations and processes that deal with the maintenance, growth and reproduction of plants. Prerequisite: Courses 101, 102 and Chemistry 1, 2 with

31 recommended. Three hours lecture. Four hours laboratory. Two hours preparation. Three hours credit. First semester.
Link, Thurston

106. (See Botany 20.)

107. (See Botany 15.)

108. **Elementary Plant Pathology**—A course of lectures, laboratory work and selected readings constituting an introduction to the general subject. Practice in pathological technique is included. Prerequisite: Courses 101, 102 and with or following courses 105, 106. Three hours lecture. Four hours laboratory. Two hours reading. Three hours credit. Second semester. Wilcox

115. **Advanced Plant Physiology**—A detailed study of the problems of plant physiology outlined in courses 105, 106 and chemistry 3, 4, 31 or equivalents. Three hours lecture. Six or twelve hours laboratory and preparation. Three or five hours credit. First semester.
Link, Thurston

116. **Advanced Plant Physiology**—Course 115 continued. Second semester.

117. **General Plant Pathology**—A broad survey of the development and present condition of our knowledge of plant disease. Special attention will be given to such subjects as the physiology and cytology of resistance and immunity, origin of parasitism, specialization, epidemics and climatic factors, malnutrition and unfavorable chemical and physical factors. Prerequisite: Courses 108, 110, 112, 114. Three hours lecture. Six hours laboratory. Three hours credit. First semester. Wilcox

118. **General Plant Pathology**—Course 117 continued. Second semester.

GRADUATES ONLY

125. **Problems in Plant Physiology**—Assigned problems in plant physiology. Laboratory work with hours for consultation. Two to five hours credit. First semester. Link, Thurston, Davis

126. **Problems in Plant Physiology**—Course 125 continued. Second semester.

127. **Problems in Plant Pathology**—Assigned problems in plant pathology. Laboratory work with hours for consultation. Two to five hours credit. First semester. Wilcox

128. **Problems in Plant Pathology**—Course 127 continued. Second semester.

This department is also responsible for the courses offered in the School of Agriculture, for which see the Bulletin of the School of Agriculture.

## ZOOLOGY

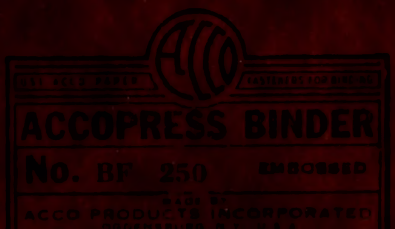
[See College of Arts and Sciences]

11. **Zoology for Agriculture Students**—A beginning course in Zoology for students in the College of Agriculture. The course takes up in a practical way the nature of living matter, development, structures and functional activities of animals, geographical distribution and animal relationships, the essential features of evolution and the general principles of heredity as illustrated in the study of the common animals, more particularly those of the farm. Emphasis is placed on the development, structure and activities of man, thru the study of animals. Laboratory and field work on type forms. Three hours lecture. Three hours preparation. Three hours laboratory and field work. Three hours credit. First semester.

Barker and Assistant

12. **Zoology for Agriculture Students**—Course 11 continued. Lectures dealing with the practical application of zoological knowledge in the fields of animal breeding, the animal parasites of our domestic and farm animals, and the relationships of our common animals of farm and country. Laboratory and field work illustrating these phases. Three hours lecture. Three hours preparation. Three hours laboratory and field work. Three hours credit. Second semester. Barker

A. **Introduction to Zoology**—A beginning course for those who desire to complete the year's work in general zoology in one semester. This course covers the same ground as courses 3 and 4. Five hours attendance. Eight hours laboratory. Five hours, or with additional assigned work, six hours credit. Second semester. Barker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